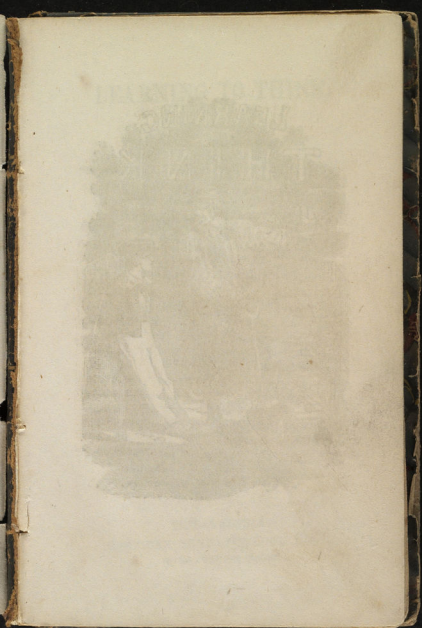


LEARNING TO THINK.

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TO
THINK



LEARNING TO THINK.

BY THE AUTHOR OF
"LEARNING TO FEEL" AND "LEARNING TO ACT."

The Lord of glory keep in sight
In all your thoughts and ways;
He only learns to think aright
Who reads His word with true delight,
And lives to act His praise.



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LEARNING TO THINK
BY
LEARNING TO READ

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LEARNING TO THINK.



CHAPTER I.

“CHARLES! stop a moment, will you? I want to speak with you.”

“You must be quick, then, if you please, that I may have a run. What is it you want with me?”

“Come here, and I will tell you. How do you like the neighbourhood now? You seemed to feel it very strange when you first came.”

“Yes; but we have been here a fortnight now, and I have picked up some playfellows.”

“So I see. I saw you with your iron hoop yesterday. It runs along the hard ground ca-

pitably. Can you tell me what it is that makes it go along so famously?"

"What it is! To be sure I can. It is my stick; you know that very well! The harder I hit it, the faster it goes."

"But hit this post as hard as you like with your stick, and it will not stir from the place where it stands."

"No! That is because it is fast in the ground."

"Yonder is a post that is not fast in the ground, but lying down in the road; hit that, then, with your stick, and see if it will run along like your hoop."

"I know it will not, because it is so heavy; it is of no use to hit that."

"Well, then, here is my pocket-handkerchief; let us see how you can knock that along. Surely that will not be too heavy for you."

"No; but it will be too light. The handkerchief would not run along at all."

"The post is too heavy, and the pocket-handkerchief is too light; you are hard to please: but suppose I put a stone in the handkerchief, and make it just what weight you please, will you roll it along then with your stick?"

"No, that I could not."

"And why not?"

"Why, because—because it would not run along at all."

"But can you tell me the reason why it would not run along at all?"

"No, I cannot; I never thought about it."

"I dare say not; for boys very seldom do think about any thing but play, unless they are obliged to it. But now let me tell you what I wanted to say to you."

"Do, and then I will be off again; for yonder is Edwin Palmer with his hoop, and we want to join him. His hoop is bigger than mine, but still we can outrun him. What is it you are going to tell me?"

"Why, I wanted to talk with you about Learning to Think."

"Learning to think! I never heard of such a thing!"

"I dare say not; but, for all that, I only wish that I had begun to learn sooner."

"But where is the good of learning to think?"

"Where is the good! What a question! But I dare say that I should have asked it myself a few years ago, and, therefore, I ought not to be surprised at you. If people had not thought about things, we should never have had the comforts and pleasures we now enjoy. The food we eat, the clothes we wear, the houses we live in, have all been produced by much thought; and our very pastimes, too. Why does the peg-top spin, the ball bounce, the humming-top make a noise, and the kite fly in the air? I hardly think you can answer

me one of these questions. Now, if you had learned to think, you would be able to answer them all."

"Should I?"

"Yes, that you would : but, instead of being able to answer them now, you cannot tell me, (I dare say,) why a battledoor will not fly in the air as well as a kite. It is something of the same form ; why will it not rise in the air?"

"It is too heavy."

"Too heavy? Why, a large kite is as heavy as two battledoors ; so that cannot be the reason."

"I cannot think, then."

"And for that very reason you should learn to think. Now, try to find out why the boy's



kite yonder does not go up higher in the air when he has let out all the string."

"Because the string holds it fast, and keeps it from going up higher."

"Then how is it that, if the string breaks, instead of the kite going up higher, it comes tumbling down directly?"

"I cannot tell that, I am sure. Can you?"

"Yes, I can, and many other things of which I once knew nothing. I am several years older than you, and ought to know more; but if you would learn to think, what is now hard to you to understand, would soon become easy. Thinking people have a great advantage over others, for they are much wiser: they can give better advice, and assist others, for they know the best way of doing things, and the proper time when to do them. If you want to know how many grains of corn there are in a bag of wheat, how would you find it out?"

"Count them, to be sure."

"That would be one way, but not the way a thinking person would set about it. Why, if you counted two hundred every minute, and kept it up day and night for a whole week, you would hardly be able to get through your task."

"How would *you* set about it, then? It is a puzzle to me how it could be done without counting."

"I would first weigh an ounce of wheat out of the bag, and count the number of grains in that one ounce. Then I would weigh the

whole bag together, to see how many ounces there were in all. If, after that, I multiplied the number of grains in one ounce by the number of ounces in the whole bag, it would give me very nearly the number of grains altogether; and this might be done, (if a pair of scales were near,) in ten minutes or a quarter of an hour."

"I should never have thought of that plan, however; but what is the use of learning to count the grains in a bag of wheat?"

"Just the same use that there is in learning to do a sum: it teaches us to reckon in the quickest and the best way. There would be no good in a boy learning the alphabet, only that it enables him to read; and there would be but little advantage in learning to write copies in a copy-book, if it did not fit us to write letters, bills of parcels, and other things, all through our lives."

"Well, that plan of counting the grains is a capital one."

"It was not hit upon without thought, depend upon it. Some time ago, I heard of a thoughtless labourer, who, seeing that a crop of grass had grown on the old thatch of his cottage, tried all manner of contrivances to get a cow that belonged to him, upon the roof of his cottage, to eat the grass."

"And how did he manage it at last?"

"Why, a neighbour of his, who had learned to think, told him, that though he could not

get the cow up to the grass, yet he might, perhaps, manage to cut the grass, and bring it down to the cow; and this plan was adopted without difficulty."

"Ha! Ha! Ha! What a foolish fellow he must have been!"

"He had never learned to think. I read a story yesterday about a mischievous monkey, that, after doing much damage, ran up a thin tall tree, and took shelter in the top branches. Two men undertook to catch him. One of them had learned to think, and the other had not. The thoughtless man climbed up the tree as far as he could; but he was obliged to come down again, for the thin branches would not bear his weight. The thinker then stepped forwards, but, instead of climbing the tree, he set to work with his axe, and soon brought down the tree, and the mischievous monkey, to the ground."

"Capital! So poor pug was taken at last. I begin to have a notion that 'learning to think' is a capital thing, and I should like to talk with you a little more about it another time."

"Well, then, be off with your hoop now, for I see that Palmer is waiting for you. No doubt I shall see you to-morrow, and then 'learning to think' shall be the subject of our conversation."



CHAPTER II.

"I SAW you were having a fine time with your sister yesterday, with your toy boat. Can you tell me why a vessel floats on the water, and does not sink to the bottom?"

"Because it is made of wood, Henry, and wood is very light; that is the reason."

"But see, here is a shot. It is not a tenth part so large as your ship. A tenth part! No, nor a hundredth part; and yet, when I put it into the water it sinks directly. What is the reason of it?"

"I cannot tell, I never thought about it. If you know, you should tell me. What is the use of asking me puzzling questions, and telling me nothing about them? You never told me why a peg-top spins, a humming-top makes a noise, a ball bounces, and a kite flies in the air."

“No, I did not, and for this very good reason: I wanted you to think a little, that you might be able to find out the reason yourself. So long as you are told every thing, you will never be a thinker.”

“If I could get anybody to teach me to think, I should like to learn.”

“Well, then, if you will learn to think, I will teach you as well as I can, and you shall know all that my kind friend, old Mr. White, has taught me. He has paid great attention to me, and I have done my best to make progress. He tells me that, to a thinking person, every thing on which the eye can look becomes an object of interest. In the grains of corn, he sees the food on which millions of people live; in the flax growing in the field, and the wool on the sheep’s back, he regards the clothing that covers mankind; and in the drops of dew that spangle the grass, and the stars that glitter in the skies, he beholds God’s workmanship: nor is there a single thing which does not supply him with useful reflections.”

“If I learn to think, shall I know why a peg-top spins, a ball bounces, a humming-top makes a noise, and a kite flies in the air?”

“Oh, yes, and a hundred things more useful to know. I was by the river side yesterday with Mr. White, and we walked to a spot where an anchor lay on the ground. He talked about it, till I knew a great deal more about



an anchor than I ever did before. At first, he put questions to me, to set me thinking; then he helped me to think; and, after that, he made every thing clear to me that I did not seem to understand."

"I wish I had been there with you."

"I wish you had; you would have heard something better worth hearing than any thing I can tell you. There was one very strange story that he mentioned: it proved that thinking justly was more important than thinking much."

"What was it? Do tell me."

"He said that a man accustomed to think a great deal about what was useless, and very little about what was useful, was on board a ship when the vessel was wrecked. No sooner did he see all around him running to lay hold of something to keep them afloat, than he ran and foolishly took fast hold of the anchor."

"The anchor! Why that would sink directly!"

"No doubt it would. He told me another story, also. He said that a party of young

thoughtless sailors, who were shipwrecked on an island where no water was to be found, were in great danger of dying of thirst; when it struck one of them, who was accustomed to think a little more than the rest, that though



there was no water on the surface of the ground, there might be some ten or twelve feet under it. So, after procuring a few pick-axes and spades from the wreck, he joined his companions in sinking a well, when they soon had water enough and to spare."

"That is a very good tale. Did he tell you any more?"

"Oh, yes, a great deal; but I cannot think

of all now. He told me about sheet-anchors, bower-anchors, stream-anchors, kedge-anchors, and pilot-anchors; all of which, he said, had been brought to their present perfection by thinking people. After explaining to me why an anchor must be large, that the thick cable might be fastened to it; and heavy and strong, to bear the great stress or strain on the cable; why it had a stock, to turn it on one side, that one of the flookes might always drag along the ground; and why it had flookes at all, to catch hold of the rocks and uneven places at the bottom of the sea, that the ship might be kept steady at her anchorage: after explaining all these, he told me that earthly things should remind us of heavenly things, and thereby be made the more useful to us. God, he said, to a thinking mind, was present in every thing."

"How could he make out that? How could he make out that God was present in every thing?"

"To a thinking mind, remember! But answer my questions, for they will be the same that Mr. White put to me. What is the use of an anchor?"

"To keep the ship from being blown about, I suppose, when they want her to be still."

"And what is a ship made of?"

"Of wood, to be sure."

"And who made the wood grow?"

"God made it grow."

“What is the anchor made of?”

“Of iron, I suppose.”

“Where does iron come from?”

“Out of the ground.”

“And who put the iron into the ground?”

“Why, God put the iron there.”

“Not only did God make the trees grow, of which the ship is made, but he formed the sea also. ‘The sea is his, and he made it, and his hands formed the dry ground.’ So that you see, God is present in the sea, the ship, and the anchor. Mr. White said, that we should ‘see God in all things.’ But when will you begin to learn to think? I shall be at home to-morrow night, if you can come then. Come at six o’clock, and I will be prepared for you.”

“Well, then, at six o’clock let it be: but it will not suit me if it is very hard work.”

“I will make it as easy as I can, and you will be surprised to find how fast you get on. I know I was.”

“Can I begin with the peg-top, the ball, the humming-top, and the kite? I should like that.”

“We shall come to them in time, never fear; but a few things must be attended to first. Mr. White says that educating a boy without teaching him to think, is like dragging him through thorns and brambles: by teaching him to think, you clear the brambles and thorns out of his way.”

"All this seems very odd to me; perhaps I shall know more about it, by and by."

"The power of thinking helps us in every thing; it is just like a school-fellow looking over our shoulder, and telling us how to do a sum that we do not know how to set about."

"If it is like that, it will be the very thing for me."

"Thinking aright lessens labour, quickens our faculties, increases our understanding, and strengthens our judgment. If you should ever think that I talk more wisely than usual, you must call to mind that I have learned what I teach you from Mr. White, or my parents."

"It will be a long while before I shall be able to talk so. It seems odd to me that you should know so many things as you do."

"You must remember, that Mr. White has had me under his care for three or four years; and then, consider, Charles, you lost your parents when you were very young, but mine are alive now: my father takes great pains with me, when he is at home; and my dear mother, who is one of the wisest and best women in the world, never yet lost an opportunity of instructing me. It would be to my shame, indeed, if, after all the care that has been taken of me, I had not learned something; though I fear not so much as I ought, with my advantages."

"If I had been brought up as you have, I

should know more than I do. But what a long time it is, to be two or three years learning to think!"

"Yes; but you begin to get good from it directly. Every day of your life it will be giving you pleasure, and making you more useful. To-morrow evening, at six o'clock, I will be ready for you."

"At six o'clock I will come. Good bye!"





CHAPTER III.

"WELL, Henry! I am come just at the time you fixed. The clock struck six as I came up the village street and passed the church."

"Yes, you have kept to the time very well. Come in, we have the room all to ourselves; so if there be any quarrelling, it will be between us two. There! sit you down at the table."

"For what use are these things that you have put on the table. Are they to teach me to think?"

"We shall see. You know, that when a child first begins to learn any thing, he is taught the names of the persons and things around him; father, mother, dog, cat: and he is next taught the qualities of these persons and things. He soon knows that father and mother are kind and good, that the dog barks,

and the cat mews. This is the beginning of thinking; but as you have learned all this, and a great deal more, you must not be treated like a very young child. You know the name of almost every thing you see the moment you look at it."

"Yes; but knowing the name of a thing does not teach me to think."

"Perhaps not; but it is a very necessary part of knowledge, and I hardly know how we should manage without it. One thing is often necessary to help us in obtaining another. A footstool is not a book; but, for all that, you may find it very useful in putting your foot on it to reach the book from the high shelf; and, in like manner, knowing the names of things will help us in thinking about them.

"The first thing for you to do is to obtain more knowledge than you have of the powers, the qualities, or properties of things. The *kindness* and *goodness* of our parents, the *barking* of a dog, and the *mewing* of a cat, are qualities or powers: you understand this."

"Yes, I understand that very well."

"If I have a knife that is strong and sharp, strength and sharpness are qualities of the knife. Now, I want you to find out the qualities of things yourself, and this you cannot do without thinking. Come, now, tell me what this is; for while I do my part of the business, you must do yours."

"It is a piece of flint, that is all."

"And what do you think of it? Take it in your hand, and tell me."

"I do not know what to think about it. It is a piece of flint. I cannot think any thing else of it."

"Feel it with your finger. How does it feel?"

"Why, it feels hard."

"What do you mean by feeling hard?"

"I mean—that—that—it will not give way when I press it hard."

"Very good. Now, do you know any thing else that is hard?"

"Oh, yes! The poker is hard,—the wall is hard,—and the floor is hard."

"What do you think of this? It is a piece of dough. How does it feel?"

"Oh, quite soft! When I pinch it, I leave on it the mark of my finger and thumb."

"It is very necessary to be quick in distinguishing hard things from soft things. I once took a leap from a bank to some ground near a brook that I took to be hard, and in I went up to my knees; for it was nothing but soft mud."

"Ah! ah! ah! That was a mistake, indeed. Have we done with the flint stone?"

"Not quite. Can you think of nothing else about it? Feel it again."

"It feels rather cold."

"What do you mean by feeling cold?"

“ I mean that it feels—I do not know how it feels.”

“ Think about it, and try to explain what cold is as well as you can. Now try. How does it feel ?”

“ It feels—a little, but only a little, like ice—and makes me rather, but not much, inclined to shiver.”

“ Capital! Why you have explained it famously. By-and-by we shall have you quite a thinker. If you were to touch a hot cinder from the fire, I suppose you would say it felt so as to make you snatch away your finger. Now, do you not see how a knowledge of the qualities of things helps us in thinking and speaking? When we want to let another know that any thing is very cold or very hot, we say it is almost as cold as ice, or almost as hot as a live coal, and we are understood directly.”

“ Yes, I see that.”

“ Well, then, now let us mention a few other things. Here is a bullet: feel it, and tell me what you think of it.”

“ It presses down against my hand—it feels heavy.”

“ Now feel this bit of cork. It is very different from the bullet.”

“ Yes! It does not push against my hand.”

“ Well, then, it must be light; nothing can be clearer than this, that substances are very

different from each other. One is hard, another soft; one hot, another cold; one heavy, another light; and so on. So that, as I told you, every substance has its particular properties or qualities. It is the knowledge of these qualities which enables mankind to find out how these substances may be made useful. Perhaps you think I am talking very learnedly, but all I tell you has been told me by Mr. White."

"How does a knowledge of a thing being hard or soft, heavy or light, help people in making it useful?"

"A knowledge of the qualities and properties of substances is the foundation of almost all the conveniences, comforts, and luxuries of life, and I will tell you in what way. The most useful things in life are food, clothing, fire, and shelter. If we had no knowledge of the quality of food, we should be continually injuring ourselves by eating that which would make us ill; for a man cannot live on grass, nor a horse on flesh, nor a cow on fish."

"I see that."

"If we had no knowledge of the quality of wool and flax, we might be half melted in summer by wearing nothing but flannel, and half frozen to death in winter by wearing nothing but linen."

"I understand now—I see what you mean."

“ We should be sadly off for fire if we made it of straw, and put stones on it for fuel ; but a knowledge of the qualities of wood and coal enable us to make up a good fire at any time.”

“ Very good, indeed. I wonder I did not see this before.”

“ It was because you had not learned to think of such things. If we built our houses of unburnt clay, the walls would be damp in wet weather, and in dry weather they would crack ; and if our roofs were covered with brown paper, instead of slates and tiles, the first heavy shower would find its way through them.”

“ I see now that it is very necessary to know the qualities of things. But how am I to find them out, if I never saw the things before ?”

“ By the use of your senses—by observation, thought, and experiment : but it will be time enough to attend to this when you know the qualities of the things that are common around you. As you found out that the flint was hard, the bullet heavy, and the cork light, by feeling them, so you would find out these qualities in other substances in the same way. One thing will surprise you in learning to think, and that is, to find that things have so many more qualities than you suppose they have. Here is a penny : you could not, perhaps, tell me more than five or six of its qualities ; but I, having learned to think more than you have, could tell you twenty of them.”

“Twenty qualities in a penny!”

“Yes; and more than twenty, to say nothing of its uses. Do you know the use of a penny?”

“To buy a pennyworth of ginger-bread, or a piece of packthread.”

“Ay; and it may be put also to other uses. A penny roll, or a pennyworth of milk, given to a starving person, might save a life; and a penny book, setting forth the advantages of piety, might be a means, with God’s blessing, of changing the mind of a thoughtless reader. But our time is gone, so we must now separate. Come again to-morrow; I shall expect you at the same hour.”



CHAPTER IV.

“How do you do, Henry? I see you have a great many things on the table ready. It is very kind in you to teach me to think; but you have a very dull scholar.”

“Oh no, Charles; I do not think so. When you are a little more accustomed to the thing, you will get on faster. Rome was not built in a day; and I do not know that, at first, I learned more rapidly than you do. I remember once reading two lines on the subject of writing; they were these:—

‘He that in writing would improve,
Must first with love fall in love.’

Now, if you should fall in love with thinking, you will find it not only easy, but also one of the most pleasant things in the world.”

“I will tell you how I think I should get on faster than by answering puzzling questions. If you would let me know the way in which you begin to think of any thing, it would help me on finely.”

“Tell me what you mean, as plainly as you can, and I will do all in my power to help you.”

“Why, here are several things on the table. Now, instead of asking me questions, take one of them, and think about it yourself. Here is a pin, and here is a pipe: now put the pipe

before you, and let me know how you began to think about it, and that will teach me, perhaps, how to think of other things."

"A very good thought. Well, here is the pipe; and now I will think about it aloud that you may hear me, instead of thinking to myself. Let me first think of the qualities and parts of the pipe, and in doing this, my five senses, hearing, seeing, smelling, tasting, and feeling will help me. You know we have five senses."

"Yes, I know that; besides, you have just told me what they are."

"You must not forget them in learning to think. My ear tells me that the pipe makes no noise, it is quiet. My eye tells me that it is clean, white, glazed, hollow, and dry; and that it has a long neck, and a cup or bowl. If I smell it, it has little or no scent.* If I put it to my tongue, it has hardly any taste. With my fingers, I feel that it is smooth, light, and hard. And when I feel it with my moist lips, I know directly that it is slightly glutinous, or sticky. Besides all this, if I put it in the fire, it will not melt; and if I break it, I discover that it is brittle."

"How many things you have thought about already."

"After the *qualities* of the pipe come its

* If it has been used for smoking tobacco it has a very offensive smell, and is connected with a very offensive habit.

uses. It is used for the purpose of smoking tobacco, and it is suited for this purpose. If it were made of wood, it would be burned; if of lead, it would be too heavy: and besides that, it would melt. If it were formed of gold or silver, it would be too expensive; and if made of brass, copper, or iron, it would, by little and little, get too hot to hold in the hand. If the bowl were larger, it would hold too much tobacco; if smaller, it would contain too little. If the neck or tube were thinner, it would not allow room for sufficient smoke to pass up; and if it were thicker, the smoke would come up faster than it is wanted. So that you see a pipe is just what it should be."

"Yes! and I see, simple as a pipe is, that there is a good deal of thought required in the making of it."

"Very true. It is made of a white clay, and formed in a mould, with a wire inside the neck; and it is burned in a kiln or furnace, and then glazed over. But having thought of the *parts*, the *qualities*, and *use* of the pipe, I will now think of those things which it calls to my mind and memory. These, Mr. White tells me, are called *associations*."

"What can a pipe call to your mind?"

"Much that is very interesting. First, I think of the number of people employed in pipe-making. What a sight it must be to see a kiln quite full of red-hot pipes! Then I

fancy that I see children assorting them, and the men packing them, and then they are dispersed all over the country, and some are sent abroad by ships and railroads. How many persons are there employed in connection with pipes!"



“How much you are making out of a tobacco pipe! I could not have thought all this could have been said of it. Would any thing else set you thinking as much as the pipe has?”

“You may try, if you like. You see there are plenty of things on the table. Choose which you will, and I will think aloud about it, in the same manner that I have of the pipe.”

“Take this brass pin, then; but I do not expect you can make much of such a common little thing.”

“Common things are often the most useful; but we shall see. Give me the pin! There, now it lies before me. Take notice that I shall begin to think of it in the same way that I did of the pipe. First come its *parts* and *qualities*, next its *uses*, and, lastly, its *associations*.”

“Ay, I well remember these.”

“Well, now, I will think aloud. This pin has a straight, taper body, a sharp point, and a little round head. I see, too, that it shines; and when I feel it with my finger, I find it hard and quite smooth. But why has it got a point? That must be that it may be pushed through any thing. Why has it a head? Oh, that it may not hurt the finger in pushing it; and that it may not run through the cloth, or other substance, into which it may be stuck. Why is it smooth? That it may pass easily where it is pushed. What is the use of a pin? To fasten clothes; to keep drawers tidy, by pinning up neatly articles of different kinds; to fasten up small paper parcels; and to help mantua-makers in their work.”

“Come, you have said every thing now about a pin that can be said; for you have gone from one end of it to the other.”

“You shall hear me go on thinking. What is the pin made of? It is made of brass, though pins are usually made of a mixture of different metals. Brass is copper mixed with another metal: this is dug out of the

earth, so that pickaxes, spades, borers, baskets, ropes, pulleys, wheels, and machinery, are all necessary, as well as men and horses, to get it out of the ground. After that, it is melted in a large blast-furnace, and purified in different ways."

"What! is there all this trouble about a pin?"

"Yes, and a great deal more; but I will go on thinking. At last, the brass is ready to be made into a pin. One person draws it into wire; another makes it straight; another cuts it into pieces of a proper length; another sharpens the point; another grinds it ready for the head; another makes the head; another puts the head on; another sticks the pins in rows on paper; and another wraps them up in parcels."

"Why, this is more wonderful than the pipe."

"Were I to add all that a pin brings to my mind, all its associations, you would be still more surprised. The men employed in sinking the pit, working the mine, and purifying the metal at the blast-furnace, with all those occupied in drawing, straightening, cutting, pointing, grinding, heading, sticking in rows, and wrapping up the pins, have bodies to provide for, and souls that will live for ever. I can fancy that I see some of them idle, ungodly, and wretched; and others industrious, pious, and happy. God made the metal of



which the pin is formed, and gave man the power to make it into a pin; so that in this little useful instrument, we may see God's goodness as plainly as we can see man's ingenuity."

"It does not signify, Henry, but I will do my best to learn to think, that I may see all these things just as you do, and be as wise."

"Ay, and I hope a great deal wiser. But you must have a care of not becoming proud and conceited. Mr. White tells me, that a little conceit will lessen the value of a great deal of knowledge; let us both then be on our guard."

"I shall think about the pipe and the pin till I come again."

"Remember, six o'clock is the time for you to be here. Farewell!"



CHAPTER V.

“I AM a little after my time to-night, Henry. I had to call on George Johnson, who is employed by farmer Smith. I found him with his children around him, sitting at his cottage door, and his wife sitting at work by his side. Though he is a poor man, I think he is very happy, and his house is always so clean that it is a pleasure to look at it. I stopped a short time talking to him, and that has made me over my time.”

“Never mind, Charles; let us try to make up for it, by going to business at once. You see that there are many things on the table. You must now tell me the qualities of them. Take up this piece of loaf sugar. What do you think of it? What qualities can you find in it?”

"It is white; and, besides that, it is rough."

"What do you mean by rough?"

"I mean that it feels rough. It rubs against my finger when I rub against it."

"Very good. What other property has it? Put it to your tongue."

"Oh, it is sweet."

"Yes, but when you find out a quality, you should describe what that quality is, and it will prevent my asking questions, and save time. What do you mean by sweet?"

"I mean that it makes me smack my lips pleasantly?"

"Taste this lump of alum, try if that will not make you smack your lips too?"

"Yes it does, but it is quite sour. It makes me show a sour face."

"I see that you understand well the difference between sweet and sour. What is sour makes you put on a face; that is very well explained. Now listen to me. There are many qualities which you may find out at once, by a glance of the eye, a touch of the finger, or a taste of the tongue; but there are other qualities which are not so soon found out, yet, as you make progress in thinking, your knowledge will constantly increase. The lump of white sugar you have tasted is soluble. Do you know what that means?"

"No, I do not."

"Well, it means that it will dissolve or

melt in water and other liquids. My brother put a small lump of marble this morning in my tea-cup, at breakfast, by way of joke, and I, mistaking it for a lump of sugar, kept turning it about with my teaspoon. Finding that it did not melt, and knowing, of course, that sugar could be dissolved, I took it out of my cup to examine it more attentively; my brother burst into a loud laugh, and then I found out what it was. Marble is not soluble."

"That was a good joke, however."

"My father said it was rather a dangerous one; for I might have put it into my mouth and swallowed it. We should be very careful in our jokes, for many a sad accident has occurred in that way. Well, I dare say that you would be able to find out, at once, whether a thing were hard or soft, heavy or light, rough or smooth, wet or dry, full or empty, straight or crooked, short or long, sweet or sour, tender or tough, thin or thick; and all these qualities you may understand, though it might puzzle you to explain some of them: but there are many others of which I dare say you know but little."

"What are they? Please to mention some of them."

"We will speak of them some other time; but, just to give you an instance: a piece of loaf sugar is solid, hard, white, sweet, sparkling, and brittle. It is soluble, too, and I have

told you what is the meaning of this word ; but when I tell you it is opaque and fusible, I question if you know what I mean."

"I am sure I do not."

"Opaque means that you cannot see the light through it, as you can through glass, which is transparent, or clear enough to let the light through it. See ; here is a candle, which I will light with a lucifer match. There ; when I put the end of the lump of sugar in the candle, it melts. Now, that which melts in water, or in any liquid, is soluble ; and that which melts in the candle or fire, is fusible."

"Oh, I shall not forget that. But now it has come into my head, will you please to let me hear you think about a mahogany table. I tried to think about it to-day, and I made out that it was hard, and had four legs ; that its use was to stand in a room ; and it put me in mind of my maps and books, for I often have them on the table."

"Pretty well for a beginning. We are much assisted when we think on any subject by the knowledge we have obtained, by the judgment we possess, and also by our memory and fancy. When you have more knowledge, you will think more freely, and take in a wider compass."

"But do let me hear you think about a mahogany table. There is one before us now, and I should so like to know if you can think of any thing more than I have done."

“ Well, it shall be as you wish. The mahogany table is hard, solid, opaque, smooth, and inflammable, that is, easily set in a flame; and its principal parts are its surfaces, edges, corners, tops, flaps, drawers, legs, and feet. It is movable, and can be made to spread out wide, as well as to fold up closer together; its use is to bear the things which are placed upon it for our convenience, especially our food. And now come the things we associate with it, or its associations: the mahogany tree does not grow in England; it grows in the West Indies, a part of the world famous for hurricanes. No such fiery flashes of lightning, no such fearful claps of thunder are to be seen and heard as those in the West Indies. I can fancy the mahogany tree, at one time waving gracefully, with half a dozen macaws and parrots on its branches; and, at another, bent to and fro, and almost torn up from the ground by the roaring storm.”

“ I should not like those storms at all.”

“ I dare say not. In the West Indies, or rather on the Spanish main, thirty or forty persons in a gang, go into the woods with a hunter among them. The hunter climbs a tall tree, and looks around him, and when he spies any branches covered with leaves of a ruddy yellow, he knows that they belong to the mahogany tree. He leads his gang to the place, and they all set to work to fell down the tree, to strip off its bark, to saw it into proper

lengths, to lay it on timber carriages, and to drag it, with the assistance of oxen, down to the river. The flaring of the torches, (for



they travel by night,) the rattling of the chains, the crashing of the brushwood, and the hallooming of the men, would astonish a stranger.”

“And a mahogany table puts you in mind of all this.”

“Yes, and of a great deal more. The timber is floated in rafts down the river; it is then put on ship-board; and after that follow

the sawing, turning, planing, carving, and polishing, to form it into a table."

"You have come to the end at last."

"Think of the wholesome food and dainty meats that have been placed on the mahogany table! Think of the family gatherings, and of the large old Bible laid on the table, morning and evening, when the knees of all around are bent in prayer, and their hearts arise in praise to God for all his mercies, especially for the gift of Jesus Christ, his Son, to die for us sinners. Think of all these things, and the mahogany table will not be found a useless subject."

"I never heard the like! I would give all my pocket money to be able to think as you do."

"Oh, cheer up, and you will be surprised at yourself yet. But our time is gone. Well, you will come again next Monday."



CHAPTER VI.

“HERE I am, Henry, five minutes before my time; and now, perhaps, you will tell me of some of the qualities that I do not understand.”

“I will, Charles; for I want you very much to get on in learning to think: but first let me show you a letter that my dear mother left on my table for me to read.”

“Oh, yes, show it me! What is it about?”

“Why, she is afraid lest I should grow proud because I know a little more than you do.”

“Is she? I never thought you proud.”

“My dear mother is a wise and good woman, and knows more of the human heart than you or I do; but you shall hear her letter.

“Dear Henry:

As you have undertaken to instruct a young friend in learning to think, let me affectionately warn you to beware of highmindedness and self-conceit, for they sometimes glide into the heart unawares. Instead of thinking how much more you know than your young friend knows, call to mind how much less your know-

ledge is than that of those who give you instruction. As pride is folly, so he who is not humble cannot be wise. This advice is given you by your ever-anxious and affectionate

‘MOTHER.’

“So you see, Charles, that while I teach you to learn to think, I have something to think of myself at the same time. But now let us proceed:—Concave, means like the inside of a basin; that tea-cup is concave. Convex, is like the outside of a globe; that ball is convex. Mineral, means from the mine; that bit of iron-stone is metallic. Artificial, means made by art, not natural; that peg-top is artificial.”

“Oh! that reminds me that you have never told me why a peg-top spins, and a humming-top makes a noise.”

“All in good time; I will not forget to tell you, never fear; but let us go on. Odorous, means giving out an odour, or scent; that piece of camphor is odorous. Pungent, is pricking, or sharp to the taste, like mustard or pepper. Elastic, is springy; that bit of Indian rubber is elastic. Glutinous, is sticky, like glue. Medicinal, means healing, or restoring; any thing that makes the sick well. Flexible, is easily bent, like that little switch. Shall you remember any of these?”

“Yes, I think I shall remember them all; so please to go on.”

“You shall have a few more qualities, then,

but not many. Caustic, means burning; vitriol and aquafortis are caustic. Fibrous, is having fibres or threads, like the root of a tree. Angular, means having angles, or corners; that lucifer match-box is angular. Spongy, is being like a sponge, full of small holes, and capable of sucking up water; that bit of cloth is spongy. Ductile, means easily put into other forms; the piece of lead there is ductile. Tenacious, is holding fast together, like a piece of hard wood that you cannot easily split to pieces. Malleable, means capable of being spread out by hammering; gold and silver are malleable. Divisible, is being capable of being divided into parts; an orange is divisible. And now, for the last, for I am afraid of tiring you; evanescent, means vanishing, or remaining only a short time; a cloud is evanescent. A knowledge of these and other qualities you will find very useful in learning to think."

"I hope I shall remember most of them."

"Is a candle natural or artificial?"

"Why, artificial. It is made by art, and therefore it cannot be natural."

"Very well, Charles, very well. Is a pen natural or artificial?"

"Natural, for it grows on a goose."

"The quill is natural, but the pen is artificial."

"Oh, yes, so it is. I forgot that it was made with a pen-knife."

“What form is this piece of egg-shell, looking at the inside?”

“Convex—oh no! I forgot, it is concave; the outside of it is convex: I remember now.”

“Suppose you were to drop a cup of water on the floor, and break the cup, how would you dry up the water? Would you use a piece of wood or coal?”

“No, for they would not suck it up at all. It must be something spongy to suck the water up; a piece of sponge, or flannel, or cloth, or a mop.”

“Is a piece of Indian rubber malleable?”

“No, it will not bear beating out with a hammer, I think, and so it cannot be malleable; you said it was elastic, or springy.”

“You remember these qualities very well; by and by your knowledge will be useful to you. This morning, in turning over the leaves of a school-book, I met with some remarks which will suit us; I have the book here, and will read them. ‘Look at the chair on which you sit. It is the result of considerable reflection and ingenuity. A man may sit upon the ground, but it is more convenient to have something higher to sit upon. When out of doors, he might sit upon a large stone, or on the trunk of a tree, and when in the house, upon the stairs; but as he wishes at times to move his seat from one place to another, a block of wood would be an improvement. The solid block, however, is too heavy to have

its position altered without trouble, and reflection suggests the advantage of a joint-stool; but then the back and arms of a man need support, and the joint-stool is transformed into a chair. The chair afterwards is ornamented, that beauty and usefulness may be united.' Thus reflection will give you an amusing and instructive history of a chair."

"I like that very much. What would I not do, to be able to think of every thing about me in that way!"

"The same book has also the following observations on a wheelbarrow. 'If a boy sees a wheelbarrow, he may pursue the same train of thought. The use of a wheelbarrow is to enable a person to remove burdens from one place to another more easily than he could do it without such an assistance; and ingenuity and thought are necessary to construct it. It must be of a convenient size; for, if too large, it will be in the way; and if too small, it will not carry a sufficient burden. It must be made of durable materials; but if it be too strong, its weight will render it useless; and, if too weak, it will break down. When the proper material, and size, and strength are agreed on, it must have handles with which to push it along, and feet to bear it when it is not being moved. After all these things, it will be no better than a mere box, till it has a wheel attached to it, that it may be easily

mov'd. With such reflections as these, a boy will find amusement and instruction in a wheelbarrow.'"

"If any thing would make me think, such remarks as these would. I should like to read that book."

"It is not mine, and therefore I cannot lend it to you. There are two other short pieces in the book, of the same kind; shall I read them?"

"Yes! yes! read them both."

"They are very short. This is the first of them, and it is just the very thing to encourage thought in a boy. 'If a boy regards his clothes, the use of them is to keep him warm, and to defend him from the severity of the weather, without restraining the use of his limbs. They must, therefore, be strong, durable, soft, and flexible, and not deprive the body of heat. Now, iron is strong, leather is durable, silk is soft, and muslin is flexible; but neither iron, leather, silk, nor muslin will make a boy a comfortable jacket. It must be made of some material which has all these necessary qualities united, and that material is woollen cloth.' This is the other little bit that pleased me. 'Every boy knows that the use of an umbrella is to keep us from the wet, but not one boy in a hundred gives himself the trouble to reflect on the necessary qualities of this useful appendage to our com-

fort. It must be of a proper texture and form to throw off the rain. It must be of a suitable size, or it will either not cover us, or it will inconvenience others: it must be strong and elastic, to resist the blast: it must be light, to be carried without labour; and it must be portable, and capable of being compressed into a small compass.”



“ Good! I wish I had begun to learn to think a year ago.”

“ I am glad to hear you say so; for Mr. White tells me, that there is not half so much difficulty in teaching any one to think, as there is in making him willing and desirous to be taught. He says, we are placed in a world of wonders, that angels might have pleasure to

gaze on : and that when we do not use our understanding, to turn it to good account, and to admire God's beautiful creation, we despise the gifts of our heavenly Father, instead of spreading abroad his glory. I must now leave you till to-morrow."



CHAPTER VII.

"I AM glad you are come, Charles; for I have not a great deal of time to spare to-night. Come, take your seat."

"Let us begin directly, Henry. I remember the qualities that you described to me."

"Do you remember that I showed you a letter written to me by my mother?"

"Oh yes, very well!—It was to tell you not to be conceited."

"You are right; and now I have a short note from Mr. White, on the same subject."

"Have you? Do let me hear it."

"It is this:

"Dear Henry,

"Some time ago, a young man set up a shop in a village, stored with all manner of useful commodities, but when the villagers went to make their purchases, the young man was so pert and saucy, that the people would not put up with it. "Your articles are good," said they, "but your ill-behaviour is unbearable; and if we cannot have the former without the latter, we will have nothing to do with you."

‘Now, thus it is with a quick, but conceited person; his conceit renders his quickness almost useless. Have a care, then, my dear Henry, that you are never conceited.’

“You see, Charles, how necessary it is that I should be on my guard against conceit. But now let me ask you, what are the three things to be attended to in thinking of any thing?”

“First, its qualities; next, its uses; and, last of all, its associations.”

“Very good. When I asked you some time ago, what you thought of a piece of flint, you replied, ‘I do not know what to think about it. It is a piece of flint, and I cannot think any thing else of it.’ You would not give me such an answer as that now, would you?”

“No, indeed, I would not.”

“Take up the piece of flint again, then, for there it lies, and let us hear you think about it. We shall then see if you are making progress in learning to think.”

“I will do my best; but mind, you must not laugh at me.”

“Oh! a good-tempered laugh is very well in its place; it is the ill-natured laugh that does mischief. If I laugh it will be in a good-humoured way, and that will not hurt you. Mr. White says, we are never safe from being led astray by our companions till we have

learned to say *No*, and till we can *bear being laughed at*. But come, now for the piece of flint. Let me hear you think about it."

"Flint is hard, heavy, cold, opaque, solid, and natural. One of its uses is to strike fire with, by means of a piece of steel."

"Very good, indeed. What else have you to say?"

"Why, it puts me in mind how useful it is to strike a light with it in the dark."

"That is better than saying, that 'a piece of flint is a piece of flint; and I cannot think any thing else of it.'"

"Yes; that would be a poor answer."

"Let me now show you how a more lively fancy, and more general knowledge, would help you in thinking; let me show you how you might have turned your thoughts to advantage. When it occurred to you how useful a flint was to strike a light with in the dark, you might have called to mind the goodness of God in giving, even to a flint stone, a quality so useful to mankind. You might have thought of the blessing of light as opposed to darkness; and that would have led you to pity the poor blind, and to feel more thankful for the gift of your eyesight. What a loss it would be to us, if we could no longer see the clear blue sky, the bright sun, the coloured rainbow, the green fields and trees, and the faces of those who love us!"



“Yes, I ought to have thought of all these things. Well, I cannot expect to think as you do; but I hope to improve as I go on. If you have still got that school-book, I should like to hear a little more of it; for what you read before pleased me vastly.”

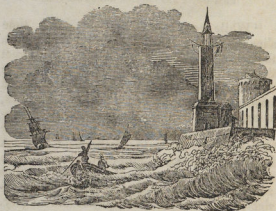
“I am going to return it to-night to the friend who lent it to me, and, therefore, you are but just in time. If you remember, I read one part to you about a chair, a jacket, an umbrella, and a wheelbarrow. It then goes on thus:—‘Common things may be made a source of entertainment and knowledge. A chair may stand as a useful monitor; a jacket may cover a suitable reflection; an umbrella may unfold an observation of value; and a

wheelbarrow may carry a maxim of usefulness. Such reflections will lead a boy to think on the construction of other things, from a mouse trap to a steam-engine, from the twisting of a rope to the building of a ship, and he will find that all are constructed on the common principle of gaining an advantage in the easiest, the cheapest, and the best manner.

“ ‘When every thing that strikes the view
Gives birth to some reflection new;
From sea to sea, from shore to shore,
This world has charms unknown before.’

“While we are reading and talking, time slips away very fast. I can only now stop a few minutes longer. This is the last extract that I can read from the book. ‘If a boy be not accustomed to reflect, he cannot understand how much knowledge supplies our necessities, mitigates our troubles, and increases our happiness; but if he be given to reflection, he will easily be made to comprehend this. A knowledge of agriculture provides us with food, and an acquaintance with manufactures supplies us with clothing. Greatly are we indebted to a knowledge of physic and surgery. The gigantic powers of the steam-engine confer great advantages; and we cannot limit the good effects that the art of printing has spread abroad in the world. The safety lamp, preserving the life of the miner, and the gas-lights, which beautify our streets and habitations, de-

mand our admiration. When we examine the microscope, which reveals millions of creatures before unknown; the telescope, bringing remote and countless worlds nearer our observation; and the telegraph, conveying information almost instantaneously to distant parts; when we see the ship uniting together the inhabitants of the east and the west, the north and the south, and inspect the compass which directs her in her passage over the trackless deep; when we regard the light-house, braving the



mountainous billows, and warning the tempest-tost mariner to escape from danger; when we gaze on the life-boat, breasting the wind and the tide, and ploughing its way through the foaming breakers, redeeming human beings

from destruction; when we see these things, we must be blindly ignorant not to acknowledge the advantages of reflection and science, and wickedly ungrateful if we do not devote ourselves to His service, who formed man out of the dust, breathed the breath of life into his nostrils, and gave him every faculty he possesses.”

“I shall ask my father to buy me that book; for it seems as if it were printed on purpose to make us think. But you are preparing to go.”

“Yes, Charles, I told you that I had not much time to-night to spare, but, if you think well, the next time we meet, I will make amends for it by explaining to you why a hoop bowls along, a peg-top spins, a ball bounces, a humming-top makes a noise, and a kite flies in the air.”

“Capital! capital! These are, of all things, what I want to know. Depend upon it, I shall be here in good time. Good bye; I will not hinder you a minute now, for I see you are in a hurry.”

“Good bye, Charles; I will be ready for you.”





CHAPTER VIII.

“Now for it, Henry! Here I am, and it wants a quarter to six. Now I shall know why my hoop rolls along; why a handkerchief will not stir; why a peg-top spins; a ball bounces; a humming-top makes a noise; and a kite flies in the air. And why a battle-door will not fly like a kite: for I dare say you can tell me.”

“First, let me give you another instance of the value of learning to think, Charles. When I first spoke to you, you seemed to care nothing at all about it; so I thought to myself, ‘If I can say something about his hoop, his peg-top, his ball, his humming-top, his whipping-top, and his kite, it will, perhaps, lead him on to want to know more about the matter.’”

“And did you speak about them for the purpose?”

“I did, just for the purpose of making you long to learn to think; and you see that, by forethought, I have brought about what I wanted.”

“Well done! But now for the hoop: that comes first, you know. Why does it run along so?”

“Now listen, then, very attentively. Mr. White tells me, that there are certain laws in nature which are universal: that is, they always act in the same manner at one time as well as another, unless they are interfered with. For instance, it is a law of nature, that water will find its level. If you let water run out of one pit into another which is a little lower, it will run on until it has risen in the lower pit as high as it is in the upper one, and then it will stop.”

“I think I understand that.”

“It is also a law of nature, that a stone cast into the air will fall to the earth. And now I will mention another law, which has something to do with the hoop as it runs along the ground.”

“Now for it!”

“It is a law of nature, that matter, or every substance around us, will always remain in the same state in which it is, unless forced into another state. A stone lying on the ground would lie there for ever, if it were not changed and if nothing moved it; and a bullet, fired out of a gun, would fly forward for ever, if

it could be preserved, and nothing stopped it."

"Would it really?"

"Yes; and, in like manner, your hoop, when once set in motion, would run on for ever, if it would not wear out, and if nothing prevented it."

"But what does prevent it? There is nothing stops it, unless it happens to run against a wall or a post."

"There you are wrong. Every pebble it meets with, however small, prevents it, in some degree, from running on as it otherwise would do. When you drive it through mud, or water, it will not go far without stopping, because the mud and the water stop its progress. When you drive it over grass, it is the same; the grass stops it."

"Yes, I know that; but when I drive it on broad flag stones, it runs along smoothly, and nothing stops it then."

"In this case, as you say, it runs on faster; but still, to say nothing of the wind which it may have to push through, it rubs against the ground, and this rubbing, or friction, as it is called, makes it, if you do not strike it again, gradually go slower and slower till it stops. The reason, then, why your hoop, when once set in motion, runs on so famously, is because it has so little friction,—so small a part of it rubs against the ground. And the reason why a pocket handkerchief will not run along

at all, is because it has so much friction, or rubs so much against the ground."

"Well, I am glad I know at last; but why does my narrow iron hoop run along better than my broad wooden one?"

"For this simple reason: it is heavier, according to its bulk, and has less friction. Your broad hoop has two or three times as much to push through the wind when it meets it; and, being two or three times broader, it must of necessity rub more against the ground than the other."

"I understand, then, that when I have once knocked my hoop along with my stick, it runs on, according to the law you spoke of, until the rubbing or friction stops it by degrees?"

"Exactly so; and it is just the same with the peg-top. The string, by being wrapped round it, forces it to spin when you dash it on the ground, and there it would spin for ever, or until it wore itself away, if the friction against the air and the ground did not gradually stop it."

"That is just like the hoop. I understand it now, thoroughly; so please to explain why a ball bounces."

"Do you remember what elasticity is?"

"Oh, yes! That is one of the qualities that you told me of: it is springiness."

"What do you mean by springiness?"

"I mean the quality of springing back again when a thing is pushed out of its place."

“Very good! Now here is a bit of Indian rubber. If I stretch it out, the moment I let it loose, it springs into its place again; and if I push it hard with my finger, and press it in, the instant I take away my finger, the pressed part springs up to its former position. Thus it is with the ball, which is elastic. The blow against the ground dents it in; and its elasticity, or sudden effort to force itself into its former round form, makes it spring into the air.”

“I shall never forget why a ball bounces now. The humming-top comes next.”

“Yes. Now for the humming-top. You must know that all solid bodies vibrate or shake when they are struck, and this vibration makes the air round them vibrate too; as soon as this vibrating air reaches our ears, it produces the sensation of sound. If you strike a drum with a drumstick, the tightened parchment begins to vibrate or shake; and if you put a bit of paper on the drum, you will see it tremble: this is a positive proof of its vibration. If you put water in a glass, and rub round the edge of the glass, with your wet finger till the glass sounds, you will see the water tremble; a proof that the glass vibrates. You shall see me do it; I have a glass here ready. Now, do you not see the water tremble?”

“Oh, yes, quite plain.”

“Well, then, you must be satisfied that the

glass vibrates, though you cannot see it move. When a violin-player draws his bow against the strings of his violin, the stretched strings begin directly to vibrate; when a flute-player blows into his flute, the flute and air vibrate immediately; and when your humming-top is set spinning, the air comes in contact with the hole in the side, and the top and air around it vibrate instantly: the vibrating air strikes against your ear, and the humming of the top is distinctly heard."

"Then it is the trembling or shaking of the top and the air that makes the noise?"

"Exactly so; or, as perhaps Mr. White would say, it is this that produces the sensation of sound. And now comes the last thing that I have to explain; and that is, Why does a kite fly in the air?"

"Ay! Now for the kite!"

"The reason why a kite flies in the air, is, because being made of light materials, and always kept with its face (or broad surface) to the wind, the wind is powerful enough to bear it up. If it were turned sideways to the wind, there would not be surface enough to press against it; if it had no tail, it would be unsteady, and turn round and round; and if the string were cut, the kite, not having its face kept to the wind, must come down. The long string on the one side, and the tail on the other, balance and hold the kite steady between them."

“But why will not my battledoor fly?”

“Simply because it is too heavy according to its surface. A penny will not fly in the air, though not a tenth part so heavy as a large kite; because it can only present about a square inch of surface to the wind: whereas paper, of the same weight as a penny, would present a surface to the wind of hundreds of square inches.”

“I see it very clearly; and now I am a great deal wiser than when I came. You may expect me in good time again to-morrow night; for I like learning to think better than ever.”

“You will find me ready for you, I dare say. Farewell!”





CHAPTER IX.

“I AM in good time again, Henry; for the clock has not yet struck. Do you know that lazy George Tanner, old as he is, wants to learn to think, as much as I do? When I told him about the hoop, the peg-top, the ball, the humming-top, and the kite, he jumped up from the place where he was lying and danced about as if he had some life in him, and he was quite pleased.”

“Well, Charles, when you have learned to think yourself, you can then teach him; and that will make you more perfect. The reason why I wished to help you in learning to think was, that you had no parents, and appeared to be not very happy when you first came into the neighbourhood. Mr. White says, ‘Befriend the friendless’ is an excellent motto.

You seem much happier than when you first came. One great advantage of learning to think is, that it produces a *love* of thinking. You told me very correctly what was necessary to be done in thinking of a thing; first, to call to mind its qualities, then its uses, and afterwards its associations; but you cannot always find out the qualities of things by your five senses."

"I can tell if a thing is hard or soft, heavy or light, directly."

"Yes, you may; but you cannot tell so easily, if it be natural or artificial; native or foreign; animal, vegetable, or mineral. It often puzzles wiser heads than ours to find out these things; but reading, observing, thinking, and conversation, render hard things easy. In teaching you to think, I do not undertake to make you wise, but only to put you in a way of making yourself wise. Mr. White says, when a boy has once obtained the habit of thinking, he is as sure to increase in knowledge, as a kernel of corn planted in the ground is sure to produce an ear of corn."

"And he is right, depend upon it. As I came here running as fast as I could, the wind was against me, and I could not get on as fast as I wished. This put me in mind of what you said of my hoop, that it often had to force its way against the wind. I do not wonder now that the hoop should not run very far without stopping."

“There is a way that Mr. White takes with me to make me think, whether I will or not; and that is, by asking me questions to which I cannot well reply without thinking.”

“What kind of questions are they?”

“I will ask you some of them. I remember once hearing a capital plan of a tradesman, to prevent his errand-boy from making mistakes, through thoughtlessness. Just before the boy set off on his errands, his master always asked him these two questions: ‘Where are you going to?’ and ‘What are you going for?’ If the boy was told to take a parcel to the shop at the corner, there might be a shop at more corners than one. If he was told to take it to Mr. Jones, there might be half a dozen Mr. Joneses in the neighbourhood, and great mistakes might take place; but when he was asked where he was going, and what he was going for, his master knew at once, by his reply, whether he understood his message properly.”

“A very good plan, indeed; but now please to ask me some of the questions you spoke of.”

“Well, then, now answer this question. Which is the heaviest—a pound of lead or a pound of feathers? Now, think!”

“Think! I need not think a moment about that; for everybody knows that lead is ten times as heavy as feathers; ay! twenty times.”

“But I do not ask you which is the heaviest—feathers or lead; I ask you which is heaviest, a *pound* of lead or a *pound* of feathers?”

“Oh! I see now: a pound of one must be just as heavy as a pound of the other. I must think a little more before I answer your questions.”

“That is the very thing that I am teaching you to do. There is hardly one in ten, among us boys, who takes the trouble to think before he replies. Can you tell me what o’clock it is? Now, think before you answer.”

“It is half-past six.”

“There is a want of thought again! I did not ask you what o’clock it was; I asked you, *if you could tell me* what o’clock it was, which is a very different thing.”

“So it is. I will try to be more careful in my next answer.”

“If I give you six young rabbits in a basket, and when you open the basket, three of them are dead, how many rabbits shall you have?”

“Why, I shall have——”

“Now, pause a little, and think before you speak.”

“Why—I shall have—six. Three alive, and three dead.”

“Very good; and, now, if one man can see twenty miles, how far can two men see?”

“Just as far again.”

“Are you sure? Pause a little, and think the matter over.”

"Oh, no! Two men cannot see further than one can; what was I thinking of?"

"Whatever you were thinking of, you were not thinking properly of the question. If a man can eat a pound of beefsteaks in a quarter of an hour, how many pounds can he eat in half-an-hour?"

"Oh! two pounds to be sure."

"There you are wrong. Very few men can eat more than a pound of meat at one time; and, if they could, they would be much longer about the last pound than the first.

"You must learn to *pause* before you speak, or you will not learn to *think* before you speak. Now, be sure you wait a little. As I went to Farmer Paton's, I met two horses, two cows, two sheep, and two pigs; pigs, sheep, cows, and horses, how many were going to Farmer Paton's?"

"Oh! let me see! two horses, and two cows, four—two sheep, six—and two pigs, eight. There were eight going, besides yourself."

"Altogether wrong, Charles! I said as I *went* to Farmer Paton's, I *met* these animals; now, if I *met* them, they must have been coming *from* Farmer Paton's, and not going *to* Farmer Paton's."

"Well, I am very stupid; but I began to count too soon."

"Yes, you did. Had you paused a little, and then thought a little, perhaps you would

not have made such a mistake. Mr. White says, that boys learning arithmetic are too apt, when they have a sum to do, to begin figuring away before they understand the question; whereas everybody ought to do the sum, as it were, in his own mind, before he puts down a single figure. The questions that I have put to you to-night are likely enough to sharpen your wits, as well as to teach you to think; but our time is quite gone, and I must hastily say, good bye."

"Good bye, Henry, and thank you for being so patient with me; but I should like to ask you just one question before you go."

"Now for it, then."

"A cart, with a heavy load in it, stood at the bottom of Painter's Hill as I came by: the horse pulled at it, but could not get on at all, till the carter put a boy on the horse's back, and then he went up the hill with the cart directly. What made the horse pull better with the boy on his back than he did before?"

"Perhaps the boy kicked him with his heels to force him forward."

"No, indeed he did not; for he sat quite quiet."

"Well, then, you have puzzled me, for I do not know. I must think of it, or, perhaps, ask Mr. White, and then I will tell you. Farewell!"



CHAPTER X.

“THE clock is striking, and here you are, Charles. There is a pleasure in teaching you all I can, for you seem so anxious to learn.”

“And so I ought to be anxious, Henry, when you are so kind and forbearing with me. But have you found out what made the horse go up the hill with the loaded cart?”

“No, I could not make it out at all, and so I asked Mr. White, when he explained the thing to me at once.”

“Did he? That is right, for I want to know very much. How was it?”

“Mr. White said, that he once wanted to drag a piece of timber up a steep bank, but he

could not do so until he laid hold of the roots and twigs which grew out of the ground above him, but then he pulled up the log of wood very easily."

"Yes! so he would; but the horse had no roots and twigs to lay hold of, and if he had, they could have been of no use, for he had no hands."

"Very true; but the weight of the boy pressing on his back kept his feet firmer to the ground, giving him a better foot-hold, and that was much the same as if he had laid hold of something."

"I understand now. I should never have found it out."

"Now, then, to business. Let me see how far we have proceeded. You know now that the way to think on any thing, is to call to mind its qualities, its uses, and its associations; and you have been told, that this method will become more easy and more useful as your general knowledge increases. You have also had proofs that knowledge greatly adds to our pleasure, in the explanation given you about the hoop, peg-top, humming-top, and kite; and the last time we met, you had questions put to you of a kind likely to quicken your wits, and to give you a habit of pausing before you speak. It will be well now, perhaps, to give you a few instances of the sad effects of thoughtlessness, and the great advantages of thoughtful habits, in the

common affairs of life. Mr. White took this course with me, and I cannot take a better one with you."

"I will be bound for it, that Mr. White's plan is a good one."

"The mischief that is done by thoughtlessness would hardly be believed by one who had never learned to think. A boy that I know, left his canary bird out of the cage when the cat was in the room: he was only away ten minutes, but when he returned, nothing was left of his poor bird but a few feathers."

"He was a thoughtless fellow, for his pains."

"A young man, in an adjoining street, took up a gun, thinking that it was not loaded; he thoughtlessly pointed it at his sister, saying, with a laugh, that he would shoot her. As soon as he fired, his sister fell to the ground to rise no more."

"How shocking!"

"A little girl, being left alone in the house, thoughtlessly went to take some water from the boiler, when the fire below caught her clothes, and she was burned to death. I myself heard her screams, and I saw her when she was dead."

"These accounts are terrible!"

"A mother thoughtlessly gave her child water to drink from the tea-kettle, putting the spout to the child's mouth. Some time after, the child, being left alone, went again

to the kettle to drink ; but the water was then boiling hot, and the poor child was scalded to death."

"Dreadful! dreadful! What would that mother think of herself?"

"Now remember, Charles, that in all these cases, no evil was intended. These terrible accidents were brought about by thoughtlessness alone, and they are not a hundredth part of the number that have taken place."

"Thoughtlessness is a very bad thing,—much worse than I ever took it to be. Why, every one in the world ought to learn to think."

"Let us now look on the other side of the question. Let us see some of the advantages of thoughtfulness."

"I shall like to hear them."

"I remember, last winter, being in a cottage on a cold snowy evening, when the cottager returned home from his work, many miles distant, after trudging through the wet sloppy snow. His wife was a thoughtful woman, so that, when he came in with his wet feet, a bright fire awaited him, and a basin of hot tea ; while a pair of dry shoes and stockings were placed ready for him to put on."

"That was something like ! This woman was a good wife, depend upon it!"

"We all like to be thought of in such cases, and one act of this kind speaks louder



than many words, in telling us we have not been forgotten. My uncle was in a house one night when the chimney took fire, and there was some fear of the house being burned to the ground. One wanted to set the doors open, and another to take away the fire in the grate; but my uncle, being of a thoughtful turn, was too wise to act so foolishly: he knew that the draught of air from the opened doors would fan the fire in the chimney, and that taking away the burning coals would not put out the burning soot: so, keeping the doors closed, he took a blanket, and after dipping it in a pail of water, he hung it up all across the fire-place, when the steam arising from it mounting upwards soon put out the fire in the chimney."

“That was well done, I can see!”

“Thinking people strive to remember what they hear of a useful kind, and are, on that account, able to do good, when the thoughtless would do nothing but mischief. A poor man by accident cut his foot deeply near the ankle, with a sharp tool, and would have bled to death, no doctor being near; but a thinking fellow-labourer, taking his handkerchief from his neck, doubled it up, and pressed it hard against the wound, tying it over with his pocket-handkerchief. A doctor was then sent for, and the man’s life was saved.”

“Poor fellow! he had reason to be thankful.”

“A fire broke out in the cowhouse of a farm-yard, where a wooden shed joined the cowhouse to the barn, stabling, and farm-house. Half a dozen thoughtless people wasted their strength in vain, in trying to put out the flames; but a poor man, more thoughtful than the rest, set about pulling down the wooden shed, thereby confining the fire to the cowhouse, and saving the barn, stables, and farm-house from being burned to the ground.”

“That man deserved to be rewarded.”

“Many of the greatest discoveries in the world have been brought about by what men call accident, and thinking people have turned these accidents to advantage. Glass is made of sand or flint, mixed with a substance called

an alkali. Some merchants, driven ashore in Syria by a storm, made a fire on the sands, with a vegetable called kali, which grew there. The sand, melted by the heat, mixed with the ashes of the kali, and became glass. This gave the merchants, who were thinking men, the hint how to make glass."

"They were thinking people."

"It was by the accidental falling of an apple, that the thinking mind of Sir Isaac Newton was led to form his beautiful system of the heavenly bodies: but I must now break off my remarks."

"Farewell, Henry! I want to learn to think now more than ever!"





CHAPTER XI.

“Now I am here again, I want to ask you something, Henry.”

“Let me hear your question then, Charles; you shall have the best answer I can give you.”

“Why is it that the clouds above our heads look so high, while those at a distance seem to touch the very ground?”

“Why is it? Oh, because—no, that cannot be the reason either—I really do not

know the reason; I must ask Mr. White about it."

"Well, then, if you cannot tell me that, please to tell me what subject is the fullest to think upon; for I sadly want to know."

"There are many subjects, which Mr. White tells me are inexhaustible, and indeed never to be understood. When we think of God, or of eternity, we soon get beyond our depth: we should always think of such subjects with deep reverence and humility."

"Yes; but I do not mean such subjects as these, but something which we can understand."

"Well, then, the subject of books is, perhaps, as full and extensive as any; because books have been written on almost every thing in the world. If you examine this book, you will see that it has a great many parts to occupy your attention. The outside, the inside, the binding, the back, the corners, the edges, the sides, the top, the bottom, the beginning, the ending, the middle, the paper, the ink, the leaves, the letters, the numbers, the words, the stops, the syllables, the sentences, the title-page, the preface, the contents, the margin, the lines, the stitching, the lettering, the ornamenting, the gilding, the pictures, and the fly leaves."

"Why, here is enough to think of for a day, without going further."

“Books are almost endless in their uses. If good, they entertain, instruct, reprove, and encourage us. They fit us to be useful while we are here, and they help us to prepare for a hereafter. Whether we are young or old, rich or poor, wise or foolish, in sickness or in health, living or dying, a good book may be made of great use to us.”

“And now, when you come to your *associations*, you will have plenty to say.”

“Mr. White was speaking to me of books this very day, so that I may perhaps remember some of his observations. The less we have to do with bad books the better, therefore we will say nothing about them; but of good books, we might talk by the hour. Think of the books that first taught us our letters, and all the entertaining and useful school-books that we have seen and read.”

“Ay, we should have been but sadly off without them.”

“Think of the knowledge that has been gained from books of arithmetic, grammar, geography, history, natural history, astronomy and philosophy, with the arts and sciences; to say nothing of all the delightful adventures of travellers by sea and land that we have pored over with pleasure.”

“I can fancy that I have Robinson Crusoe before me now.”

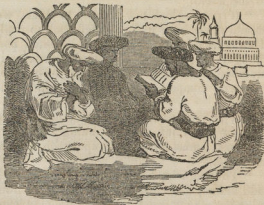
“Yes, and Pilgrim’s Progress, and twenty

other works that have delighted us. Had it not been for books, what should I have known of the lives of those good men, Leighton, Baxter, Bishop Hall, Doddridge, Bunyan, Flavel, Matthew Henry, Howard, Scott, Swartz, Newton, Wesley, Whitefield, Watts, and Romaine?"

"What a memory you have!"

"Think of the flood of knowledge that has been poured out, in the shape of books, by the Sunday-school, Bible, and Tract Societies of this and other countries. They will amount to MILLIONS of MILLIONS."

"What a number!"



"Fancy to yourself the half-frozen Esquimaux amid ice and snow; the olive-coloured Hindoo, the sooty negro, the savage New

Zealander, the wild Caffre, and the ignorant Hottentot, the Choctaw and Cherokee—some of these have obtained the best of knowledge from books. I can see them now: here are some in their under-ground houses; and there is a group of Hindoos sitting in a verandah, near the river Ganges; there is a family in their wigwam; a fourth in the desert; a fifth in their canoe; and a sixth in the bush country, all putting away from them the idols they have worshipped, and reading in books, printed in their own language, the way of salvation through the Saviour of sinners."

"I see now that books take in all the nations of the world."

"If people had not learned to think, we should never have had a printed book to read. They were thinking people that invented and brought to perfection the printing-press, microscope, telescope, safety-lamp, fire-escape, mariner's compass, life-boat, and ship building."

"It is very odd that I should never have thought any thing about thinking till lately: however, I must try to make up for this neglect in future."

"To one who has learned to think, as I said before, the world is a different place from what it once appeared. He will not only learn to look at things singly, but at the world at large. He will reflect on its continents and islands; its mountains and valleys; its rivers,

lakes, and oceans; its trees and flowers; regarding it as the dwelling-place of man, fitted up for him by his Almighty Maker. He will turn to the animated creation, and gaze with wonder on the different natures of insects, reptiles, birds, fishes and beasts. After this, man will become more the subject of his thoughts; and then, perhaps, he will be led to reflect on his Almighty Maker, the Creator and Preserver of all things."

"You have summed up every thing now."

"No, not every thing; for Mr. White says, that many reflect wisely on creation, and think reverently of their Creator, who are altogether in ignorance of the Redeemer. Now, if we know about all things on the earth, and do not know our way to heaven, of what use to us will be all our knowledge?"

"Very true. You have mentioned so many things to-night, that I shall have plenty to think of till I come again."

"Mr. White pointed out to me the amazing power that man has over all living things, when he uses the faculties of his mind; that is, when he becomes a thinker. The crocodile and the boa constrictor are, perhaps, the most formidable creatures among reptiles; but thinking man easily puts a hook into the jaws of the one, and with weapons destroys the other. The eagle, the king of birds, is swift in the air; but thinking man is still

swifter, for he overtakes him with his bow or gun, and brings him to the ground.

“The lion and the elephant are the strongest among beasts; yet thinking man easily takes them both in his snares, and keeps them as his captives; and the mighty whale, the greatest and the strongest amongst the inhabitants of the sea, contends in vain with thinking man, who strikes him with harpoons till he turns on his back and dies.”

“Why, it seems to me that a thinking man can do almost any thing.”

“But now comes the strongest proof of all, of the power of thought. Men who have learned to think, easily overcome all other men in the world. Ten civilized men are more than a match for a hundred savages.”

“I see clearly that an ignorant man has no chance with one who has learned to think.”

“Thought gives knowledge, and knowledge gives power; but good men will not use, or rather misuse, their power, as bad men do. Bad men will go among savages to wrong them, and to shed their blood; but good men mingle with them to do them good, to take them seeds and implements of husbandry, to trade with them, to instruct them in useful arts, to spread among them the gospel of peace, and to direct them in the way to heaven.”

“Well! if I remember one half what you

have said to-night, I shall be a great deal wiser than I was before. I would not give up learning to think on any account whatever. Farewell! and thank you."

"On Monday come again. Good bye."





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CHAPTER XII.

“I AM glad you are here early to-night, Charles, because I am in a hurry, and cannot stop long.”

“I am sorry for that, Henry; but we must lose no time, then. Did you ask Mr. White about the clouds?”

“Yes, I did; and he says the reason why the clouds at a distance seem to touch the ground is this. The world being of the shape of a ball, the clouds are spread round it in every direction at about an equal distance, like a huge umbrella over our heads. Now, though we can see the distance between us and the farthest discernible object on the earth, we cannot see the distance between that object and the sky: for this reason it is, then,

that distant objects appear to touch the sky, simply because we cannot see the distance between them."

"I see now very well; but I shall never be able to learn to think so well as I want to think, that is certain."

"Oh, never fear! I have awakened within you a desire to learn to think, and doing that is a little like setting a stone to roll down hill; when it is once set off, it will continue its course of itself. Having set you off thinking, I am not at all fearful of your stopping in your course! Every one is at fault sometimes, and, therefore, you must not be out of heart when you find yourself at a loss. Remember how you puzzled me about the horse pulling the cart up the hill, and about the clouds."

"There are half-a-dozen, or a dozen other things that I want to know. Ever since you told me about the hoop, the peg-top, the ball, the humming-top, and the kite, I have intended to ask you. In the first place, do you know why my squirt draws up the water? I cannot make it out."

"Mr. White has explained fifty things of this kind to me; and I will try, as well as I can, to make you understand what you want to know. I must begin by saying, that the air, which is all around us, presses against every thing; and the only reason why we do not feel it, is because it presses equally on all

sides at the same time. A balloon, that bulges out so much, would, if the inside air were all taken out of it, be pressed together by the outside air, as flat as a pancake."

"Would it really?"

"Yes; but I will now speak of the squirt. The handle has something wrapped round it on the inside, which makes it air-tight. When you put the point in the water, and pull up the handle, it leaves what is called a vacuum, that is, a space with no air in it, inside the squirt; into this space the water is forced up by the outward air, which presses upon it."

"I can hardly understand that."

"Well, then, I will try to make it plainer. If you put a wheat straw into a pail of milk, and suck up at the other end of it, you draw away the air out of the straw, and the outward air, pressing on the milk in the pail, forces it up the straw."

"Now I understand you very well. Tell me next, if you please, why my leathern sucker sticks so fast to the stone on which I put it. I can hardly pull it away."

"I dare say not. After you have pushed the wet leather close down to the stone, you make a vacuum, when you pull the string, between the middle of the leather, which you pull up, and the stone; and then the pressure of the outward air on the leather keeps it fast to the stone. Mr. White took away the air

from under my hand with an air-pump, and I felt directly such a weight on my hand that I could hardly stir it at all. The weight was the outward air, which pushed my hand towards the vacuum."

"This is very wonderful."

"We are in a world of wonders. But have you any other question to ask me?"

"Yes! two or three more. I was in old nurse's cottage to-day, and she has got a weather-house, and a man comes out of it in wet weather; but in dry weather he goes in again, and a woman comes out. Can you account for it?"

"Very easily. The man and the woman are made to move by a piece of catgut inside. When the air is moist, the catgut stretches, and out comes the man; but when the air is dry, the catgut shrinks up, and by drawing in the man on one end of a stick, pushes out the woman at the other."

"Well, how curious! It is a silly thing not to learn to think. Do you know why the sun puts the fire out; for old nurse says it does?"

"Ay! Mr. White says so too, and for this reason, that the purest part of the air, called oxygen, which principally supports the fire, is drawn away by the sunbeams. But have you asked me all your questions now, for I have no more time to spare?"

“I will only ask one question more, and that is, How can we tell that the world is round, and not flat?”

“That used to puzzle me, till it was explained to me, but I can now give you several reasons. One, perhaps, will be sufficient. If a fly was to crawl along the flat table, in a straight line, he would never come to the spot where he started from; would he?”

“No, never! he would get further from it every step he took.”

“But if a fly was to crawl round an apple, in a straight line, he would come to the same place from which he started, without turning back again.”

“Yes, he would; that is certain.”

“Well, then, a ship does the same thing; for it sails straight on round the world without



turning back again, till it comes to the same place where it set sail from.”

“Then the world must be round, though old nurse will not believe it; but I shall know now

how to teach her. Learning to think is a most capital thing!"

"And, as you think so, I trust you will go on to learn; not forgetting, when you think of any thing, its qualities, its uses, and its associations. Suppose I sum up together some of the advantages of thoughtfulness."

"Ay, do; and then I shall, perhaps, remember them better."

"Thinking adds to our pleasure, making every thing around us interesting. It produces a love of thought, and a habit of pausing and considering before replying to a question. It extends our knowledge and power, quickens our faculties, corrects our judgment, enlarges our minds, and explains many things around us, which we do not understand. It lessens labour, makes hard things easy, protects us from evils which thoughtlessness brings upon us, gives us power over all living things and unthinking people, and renders us more useful and more happy. In a word, if we learn to think, and put our thoughts to a good use, we shall not fail to fear and obey God, and to love and serve mankind."

"Come, you have summed up every thing clearly; and I am glad that I know now, why my squirt draws up the water, and my sucker sticks to the stone; why the man comes out of the weather-house when it is wet, and the woman when it is dry; why the sun puts out

the fire; and how to prove to old nurse that the world is as round as a ball."

"If you like, you may come a little earlier to-morrow night. Farewell!"

"Then I will. Farewell, and thank you."





CHAPTER XIII.

"I WANT to know a great many things, Henry; but first, can you tell me how to talk? I am in pretty good time to-night, so please to tell me the way to learn to talk."

"The way to learn to talk, Charles, that is if you wish to talk to any good purpose, is to learn to think, so that you are now in the high road of learning to talk. Mr. White says, that to talk well, wisely, and humbly, is a

great attainment; but why do you wish to learn?"

"I will tell you. This morning a lady called at our house with two little boys, younger than I am, and we took a walk together round the garden. One of them spoke very prettily about the flowers, and I felt ashamed that he should be able to talk about them better than I could do."

"Depend upon it, Charles, that little boy was a thinker. Get on in your thinking, and then you will find but little difficulty in talking."

"You can talk of every thing, and I can talk of nothing."

"No, no, Charles! you are mistaken; you think me wiser than I am, because I tell you so much of what Mr. White has told me. He says, that thoughts grow very fast, and that the more we think, the more we shall find to think about."

"That seems very strange, but tell me how a thought grows."

"You shall see. Suppose you were to speak of field flowers, a little thought would bring to your mind the heath-flower and daisy, the primrose, cowslip, and daffodil, the brier-rose, the violet, and convolvulus."

"Yes, I should think of them so far as to mention their names, and then I should come to a stand still; but how should I be able to make my thoughts grow?"

“By thinking of the field flowers a little more, for then you might be reminded of the situations in which they grow. The heath-flower abounds on the mountain; the daisy adorns the mead; the primrose, and cowslip, and daffodil are found in the dell; the shady bank is made fragrant by the violet; and the brink of the brook is garlanded with the wild convolvulus.”

“Well, that is good! Thoughts do grow very fast, and if you went on thinking still more, of field flowers, would your thoughts keep on growing?”

“To be sure they would, but you shall judge for yourself. Have you forgotten what I told you about associations?”

“No; but it was in learning to think that I was to remember associations.”

“Very true; but as you cannot learn to talk wisely without learning to think wisely, so in talking as well as in thinking, you must make the best of your associations.”

“And how will your associations make your thoughts about the flowers grow?”

“In this way. The moor and the mountain remind me of a story I once heard of a hermit, who lived on the side of a mountain, that rose up from an extended moor. For three years he dwelt in a cleft of the mountain, eating of the roots and rude berries which were found at its base, and drinking of a fountain that issued from a rock. For three years he inha-

bited this inhospitable place, doing no good to human kind. It happened, one day on visiting a village, not very remote from the place, in a time of sickness, that he was able, by his knowledge of herbs, greatly to relieve three villagers of their malady, on which occasion he thus spoke to himself :

“ In the last three hours I have done more service than in the three preceding years. I now see that it is not by shunning society, but by dwelling among men, that we can most glorify God, and benefit human kind.”

“ Well, that is a capital story.”

“ The daisy brings to my mind the little flower, or sprig of moss, I forget which, that gave comfort to Mungo Park, when in a fit of despondency he flung himself on the ground in a desert place. If, thought he, God takes such care of the herb of the field, why should I doubt his goodness to me?”

“ Well said ! Mungo Park.”

“ I have now before my fancy a high bank, near the brink of a river. I saw it when it was covered with primroses of different colours, for which it was so famous, that it went by the name of the beautiful bank. Many times have I thanked God for the sight of those lovely primroses.”

“ It is as plain as that two and two make four, that thoughts do grow, and very fast, too.”

“Let me now see if you have been thinking of what I have said, and if a thought will not grow in your head, as well as in mine. Instead of field flowers, let us speak of birds: what birds can you think of?”

“I can think of plenty of birds. There are the robin and wren, the marten and swallow, the magpie and crow, and the hawk and the eagle.”

“Do you not see how your thoughts have grown already? Why, they take up twice the room they did before! But now try to think still more of these birds. What did you ever see or hear of the robin and the wren?”

“A robin used to hop in sharp weather on my father’s knee, as he sat in the summer arbour, with a plate of crumbs on his lap; but when the warm summer came, thank you! he was off to the fields, and no more came to the arbour.”

“Ay, there are many such friends in the world as that robin; but do you remember any thing of the rest of the birds?”

“I remember asking my uncle, why the martens and swallows flew about so swiftly, skimming along so close to the water on the pond; indeed, sometimes they dipped into the water; and he told me it was to catch the flies. I never knew before what the reason was.”

“ Now for the other birds.”

“ There was a crow and a magpie that built their nests on the two elms at the back of our garden. The crow did no mischief that I know of, but the magpie flew off at different times with a doll’s frock, and a glove belonging to my sister.”

“ We must not be too hard on the poor bird, Charles; for boys are sometimes as mischievous as magpies.”

“ You do not mean me, do you?”

“ Whoever I meant, I did not say that I meant you; but if you think that you are mischievous as a magpie, I cannot help it. Do you know any thing about a hawk or an eagle?”

“ Nothing about an eagle; but once when I was at my uncle’s farm, a hawk pounced down upon one of the pigeons as he stood by the side of the pond, a little way in the water. Away flew the hawk, with the pigeon dangling from his claws. While I was looking at him, a gun went off, the pigeon flew away, and down tumbled the hawk into the fold-yard. It was my uncle who shot the hawk from behind the pigeon-house.”

“ Do you now see how your thoughts have grown? I question if your account of the birds is not better than mine of the flowers.”

“ I hardly thought of getting on so well,

but if you had not put me in the right way, and asked me the proper questions, how would it have been then?"

"Perhaps I may have helped you a little; but by thinking on what we have both said, and adopting the same plan, you may be able to talk quite as easily about the beasts of the field, the fishes of the sea, and many other parts of God's creation, as of flowers and birds. If Mr. White were here, I know what he would say."

"What would he say? How can you tell?"

"I do not mean that I know the very words he would speak, but very near the meaning of them. He would say that whether we talked of one part of the creation or of another, we should try to turn our conversation to profit. The same Almighty hand that made an ant, formed an elephant; the same Almighty power that spangled the grass with dew, and scattered dust on the ground, spread abroad the wide ocean, and piled up the mountains one above another, for 'the sea is his, and he made it, and his hands formed the dry land.' Mr. White would say, that we should never think of God's works without desiring to promote God's glory."

"And it would be right, too, every word of it. I feel sure that I could talk better now

about many things, than I could when I first came to you."

"I am glad to hear you say so, for it shows that our time has not been wasted. Farewell!"



CHAPTER XIV.

"WELL, Charles! you are here. Let me tell you again, that as you get more knowledge, you must be more than ever on your guard against being conceited and high-minded; for this, in a boy, is one of the most difficult things to cure."

"I have not much to be highminded and conceited about, Henry; for I know very little."

"Those who know but little, are often more conceited than those who know a great deal. I do not think you are at all conceited now, and I hope you never will be. Mr. White tells me, that he has more hope of a boy of moderate talents who is humble and persevering, than of one who thinks more highly of himself than he ought to think. He says, we ought never to conclude that another is more ignorant than ourselves, merely because he does not do things in the same way that we do them. There are such different ways of doing things, that we ought to compare his way with ours, and see which is the best, before we venture to call his knowledge in question."

"There may be different ways of doing a thing, but one way must be better than another."

"It may be so in most cases, but not in all; and then our way may not be the best, you know.

"In taking a walk yesterday, Mr. White threw his cane too far in showing me how the Indians threw their lances, and it fell into Fowler's large pond; the question then was how to get it out again, for it was nearly a dozen yards from the side."

"I know what I would have done; I would have thrown stones just beyond it, and the splash of the water would have soon brought it to the side."

"And so I thought, but the wind blew too strong for that, and drove the cane back again faster than the splashing of the water brought it nearer. Mr. White thought a moment, and then determined to take off his clothes, and swim for it."

"Well, I suppose that was the very best thing that could be done."

"He said, 'Now if I had a piece of string long enough, by tying a stone or a stick to the end of it, and throwing it beyond the cane, I could pull it to me;' but he had no string."

"Ay, then he was obliged to swim for it, after all."

"You are wrong there, for just as he had pulled off his coat, Reynolds, the baker, came up with his great Newfoundland dog. No sooner did Reynolds see what was the matter,

than he cried, 'Carlo! Carlo! bring me that, you sir!' In plunged Carlo, and in two mi-



minutes he came out again with the cane in his mouth."

"Well done, baker! and well done, Carlo, too!"

"I once heard of an Indian who was so surprised at the number of people that he saw when he came into civilized society, that he began to keep an account of them by cutting a notch on a stick for every person who passed. His stick was soon full, and finding still more people, he threw it away as useless. Those who have thought more than the Indian, would have used a better method; they would have put down the numbers in figures. You remember that, in one of our early meetings, I spoke to you about anchors."

“ Oh, yes, I remember it very well.”

“ And you know that a cable is a long thick rope fastened by one end to the anchor, and by the other to the ship. Well, in our country and in Europe, cables are made of hemp ; in Africa, of straw, and in Asia, often of long grass : still they are all cables, made for the same object, and answering the same end, though they are made in a different manner.”

“ The hemp cable must be the best though, and I should think it foolish to make a cable of straw or grass.”

“ Hemp may be, and no doubt is, the best, but the others may be cheaper, or easier made, or have some other advantage, so that it may be as wise to make a straw cable in Africa, and a grass cable in Asia, if they answer the purpose intended, as to make a hemp cable in Europe. Cables now are usually made of iron, these being stronger than those of hemp. If a mariner wished to sail round the world, it would not matter whether he sailed to the east or to the west, for either would take him round the world if he went on, and he would come to the same place again, like a fly crawling round an apple.”

“ I should not have thought of that till you told me, and yet it must be so. I see clearly enough that there are different ways of doing the same thing.”

“ One man who wishes to measure an object, takes with him a string for that purpose ; while

another puts into his pocket a foot rule, or a yard rule. for the same purpose. Indeed, there are half a dozen ways of doing many things. Suppose half a dozen persons want to find the text of Scripture, 'A wise son maketh a glad father; but a foolish son is the heaviness of his mother.*' Not knowing exactly where to find it, they look for it in Cruden's Concordance; but every one sets about it in a different way. One looks for the word *wise*, another for the word *son*, a third for *maketh*, a fourth for *glad*, a fifth for *father*, and a sixth for *foolish*; so that they all succeed in attaining their object by a different course; and if even two other persons wished to find the same text, one might find it under the word *heaviness*, and the other under that of *mother*."

"Why here are eight ways of doing the same thing, and every one of them as good as the other."

"I knew two labouring men who were neighbours, and each of them had a garden. One was always in his garden, in summer, at five o'clock, but the other never did any thing in his garden till six or seven o'clock at night."

"He must have been an industrious man who began to work so early, but the other was a sorry idle fellow."

"Not so, for he was quite as industrious as his neighbour."

* Prov. x. 1.

“How can that be, when one was up with the lark, and the other was never seen with a spade in his hand till night?”

“I will tell you. They worked at the same place, and it was necessary for one to be at the factory very early, so that he had no time to get into his garden till he came home in the evening. The other being required at the factory at a different time, did not go there early in the morning, so that he was able to work in his garden an hour or two before he went to his employment. You now see, then, that one might be quite as diligent as the other.”

“Yes I do, Henry. If I could only think as you do, I should not make so many mistakes.”

“Now, let me see if you can think right in the following case. John and Thomas were two neighbours, who wanted to speak with each other when they had an opportunity. One day they met in a wide road, but John happened to be on one side the road, and Thomas on the other. Now, ought Thomas to have crossed over to John? Or should John have gone over to Thomas?”

“Oh, that could make no difference at all. In such a case it would not matter at all which crossed over.”

“When you have learned to think, you will give me a very different answer.”

“Well, I think you must be wrong there!

Why what could it signify to either of them in such a little affair as crossing the road?"

"Very little, certainly, if they were both able to cross the road without difficulty, but it would signify a great deal, if one of them was upright, and the other very lame, or, if one had a heavy burden on his back, and the other carried no burden at all."

"You are right."

"Learning to think should make us consider the state of others. We should always turn out of the way for one who is heavily laden; we should be ready to run on an errand for the lame, and to read the Holy Scriptures to the blind, or to those who cannot read themselves. I wish you could hear one-half of what Mr. White says on the subject of consideration."

"I can think about a knife, a piece of flint, a hoop, a peg-top, and things of that sort, better than I can about what people ought to do and to say."

"Because the latter requires more judgment. The great point is to gain the habit of thinking, but most of us are apt to speak and to act without thinking at all. After a while, I have no doubt you will be a thinker."

"I shall try to remember not hastily to blame a boy who does a thing in a different way from what I do."

"A very good resolution. If two men have to go a dozen miles, one, being hearty and

strong, may prefer to walk, for then his journey will cost him little or nothing; but the other, being weakly, may think it better to hire a horse, and ride: for though it may cost him more money than walking, it will be more convenient to him, and he may gain in time what he pays in money. One man works with his hands, another with his head; one man works hard and spends freely, another does less work, and spends less money, so as to be equal with the other at the week's end."

"I should think a long while before these things would come into my mind."

"Well, you have had enough for the present, but I hope you will not forget to keep humble; and to be considerate, you must also try to remember that there are more ways than one of doing the same thing. Farewell."





CHAPTER XV.

“How are you, Charles, after your walk? But I hardly need ask you, for the colour in your cheek tells me.”

“Very well, I thank you, Henry. I have had such a run, for I want to know something about building. Can you tell me about it?”

“Not a great deal, but I have heard something about most trades, and if your questions are not very difficult, perhaps I may be able to answer them.”

“This morning I went into the hut that stands on the edge of the common, and it was full of smoke; for old Betty was boiling her pot, and a shower fell, and the rain came through the hole at the top, where the smoke ought to have gone. After that, the water ran under the old crazy door, and the wind

blew through the cracks in the wall. If I ever build myself a house, I will take pretty good care to keep out the rain, and to let out the smoke."

"A great deal of thought is required in building a house. How would you set about yours?"

"That I hardly know, but I would have a very wide chimney to let out the smoke, you may depend upon it; and it should run straight up very high in the air. My house should be built, too, on a very high hill, and then the water would not run in under the door."

"If the chimney were very wide, it would be very likely to let in the rain, but not quite so likely to let out the smoke. A small chimney would have a better draught than a very wide one."

"Would it, indeed?"

"Yes, and for this reason; the hotter, or the more rarefied the air is in the chimney, the lighter it is, and the faster it goes upwards. Now, the fire could not rarefy the air in a very wide chimney, so much as in a narrow one."

"Oh, then, my chimney shall run up very high, but it shall not be very wide."

"It would be rather dangerous to run it up very high, especially as your house is on a hill, for it might, in some blustering day or night in November, come toppling down upon the roof, and, perhaps, upon your head."

“So it might. I never thought of that. I will have a low chimney. A high one will never do, I see.”

“I can hardly approve of your plan of building on the top of a very high hill. For, in the first place, you would not be likely to obtain a good supply of water in your well, unless you sunk it very deep, and that would cost a great deal of money, and after all be very inconvenient.”

“I see that I am wrong again.”

“Then, though your house might be pleasant in summer, it would be sadly exposed in the winter; and, besides, it would be no easy matter to have every heavy thing you wanted dragged up to the top of a very high hill.”

“I will give it up at once, Henry. No houses on high hills for me; I see they will never do at all. But if you had to build a house, what would you do?”

“No doubt if I were to have a house built under my own direction, I should make sad mistakes for want of knowledge; but having more thought than you, I might, perhaps, run into fewer errors.”

“Just tell me how you would proceed.”

“Well, then, I will. Food, clothes, and a house to dwell in, are the first three wants of man. The savage hunts and fishes for food, wears the skins of animals for clothes, and lives in a cave, a hut, a tent, or a wigwam; but civilized people, that is, those who have

learned to think, cultivate the ground, spin and weave wool and flax into cloth, and build houses. You recollect, I dare say, that beautiful text of Scripture which speaks of the clothing of flowers. 'Consider the lilies of the field, how they grow; they toil not, neither do they spin: and yet I say unto you, That even Solomon in all his glory was not arrayed like one of these.'**

"Yes, I recollect that text, and always think about it when I see a lily."

"Mr. White says, every one should think twice before he begins to build once, remembering the saying, 'Fools build houses, and wise men live in them.'"

"That is an odd saying, however."

"It does not mean that all who build houses are foolish, but it reproves the thoughtless people, who begin to build without being able to finish what they begin, or build extravagantly, and thereby ruin or injure themselves. But now for the house that I am to build."

"Ah! that is what I want to hear about."

"In the first place, I would reckon up what the cost would be, taking into consideration that the expense of building a house is almost always more than the builder's calculation. I would then choose a dry, airy spot, where there was good water."

"A very good beginning, indeed."

* Matt. vi. 28, 29.

“I must next either buy the land, or have a long lease upon it, because when the lease is out, my house will belong to the land-owner. It will not answer my purpose to build a house without having a long lease.”

“I should never have thought of that.”

“When I begin, especial care shall be paid to the foundation, for if that is bad, all that is built in a month may come down in a minute.”

“Very true, you have learned to think to some purpose.”

“The premises shall be well drained, that the house when built may not be damp, and proper water-courses shall be made. The walls shall not be built up too fast, so that they may have proper time to settle; the mortar shall be thoroughly made, and I will see after the bricklayers myself. The fire-places and chimneys shall be well tried, and if the smoke does not draw up well, or if the wind blows down, I will have proper chimney pots, or other contrivances put on the tops of the chimneys.”

“You go the very way to have a good house.”

“As far as I can judge, the carpenter shall use none but good, sound, seasoned timber, or my house will be worth but little. The mason, the plasterer, the glazier, the painter, and the paper-hanger shall find me always with

them, that I may be satisfied every thing is done in a workmanlike manner. The locks and bolts shall be well examined, as well as the bells, window fastenings, and water spouts. The grates, especially the kitchen grate, with the oven in it, and the boiler and the coppers, shall be well set."

"There is nothing but what you seem to think of."

"When my house is built, I must see that it is properly furnished. It would take me a long time to tell you all the things. One, however, I will tell you of, but try to guess what it is."

"Why, a large table, or a chest of drawers, or a book-case."

"No, it is not one of these."

"Do tell me, then, for I shall never guess it."

"Well, then, it is a family Bible. Mr. White says, that the best built house in the world, with the very best furniture, would be incomplete, if it had not the word of God in it. My house, then, shall have in it a large family Bible."

"Very good, Henry. I should be better able to see to the building of a house now I have heard you talk about it."

"Perhaps so; but let me question you. It is not so much by hearing the thoughts of others, that we learn to think, as by deter-

mining to reflect on things ourselves. Now, if you had a house to build, how should you proceed?"

"First, I will reckon up every penny it will cost me, to see if I can afford it; and then I will seek out a dry place, that has good air, good water, and a good prospect."

"Very well! Then you will begin to build."

"No, indeed! not a brick shall be laid down till I have a good long lease. I will never lose my house for want of a lease, I warrant you."

"Oh! oh! you are learning to be thoughtful indeed."

"When my lease is safe I will begin, but not before the foundation is known to be a good one. I am not going to have my house tumble on my head, if I can help it."

"What next will you attend to?"

"To the draining, and to the mortar and the bricks. The bricklayer shall not get on too fast; and if the carpenter uses any bad timber, he shall be my carpenter no longer. All the work people shall be looked after; and when I come to furnish my house, I will not forget the large family Bible."

"Who can tell, Charles, but what our conversation to-day may be useful to you in years to come? but, however this may be, learning to think is the very best way to live to God's glory, our own good, and the welfare of those round about us. I am reading a book which describes the human body just

as a house is described: the eyes are the windows; and the ears, the nose, and the mouth are the doors. Now, if you like, when you next come here, we will talk about it, for hardly any thing is more likely to set you thinking than such a subject."

"Yes, let us talk about it. I shall like it of all things. Ever since you told me why it is that a hoop bowls, a peg-top spins, a ball bounces, a humming-top makes a noise, and a kite flies in the air, I have wanted to learn to think more than ever, and if you tell me about the human body being like a house, it will be just the very thing. Before the clock strikes six I shall be here."

"Very well, you will find me ready for you. Good bye!"



CHAPTER XVI.

"I HAD to go on an errand, Henry, or I should have been here before now; but it is not six o'clock yet, is it?"

"No, it has not yet struck, Charles. Hark! it is striking now. If we were always as punctual in other things as we are when we expect to be pleased, it would be well for us. When you first began to learn to think, I was obliged to ask you to come to me, but now that is not necessary, for you are ready to come of your own accord."

"Yes, that I am. You told me once, that the power of thinking helps us in every thing, just like a schoolfellow looking over our shoulder, and telling us how to do a sum that we know not how to begin. I have thought of that many a time since: but now for the human figure and the house."

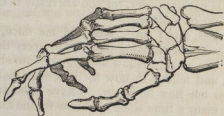
"There are few things that set forth the wisdom, power, and goodness of God more than the human figure, to the mind of a thinking person. Every part of it is so well suited to the whole, and the whole is so well put together, that none but God, who is all wise, could have formed such an excellent piece of workmanship. If we regard it as a building, it is one of the most curious buildings in the world."

"Tell me what it is that is so curious."

"Nothing, if you do not think, but every thing if you do."

"If I were to begin to think about it, I should begin with its parts, and then go on to its qualities, and after that to its associations, just as I did with the flint stone."

"The human figure is composed of so many parts, that it would take up all our time to talk about them, even if I knew them; but I do not know one half of their names. We should find enough in the human hand to fill



us with surprise. All that we can do now, I think, is to speak of the body under the likeness of a house."

"Then you will begin with the foundation, I dare say, for the dry, airy situation, and the long lease, will not be wanted."

"I do not see that the foundation will be wanted more than the situation and the lease, for the foundation is not the house, but only that on which the house stands."

"Very true ; but come ! I want to hear you think aloud about it directly, for what I say only hinders you."

"We may, perhaps, just say this much of the foundation of the house of clay we inhabit, that its 'foundation is in the dust,' and it is 'crushed before the moth;' and its lease is a very short one, for 'man that is born of a woman is of few days, and full of trouble. He cometh forth like a flower, and is cut down: he fleeth also as a shadow, and continueth not.'"

"Now, then, for the walls!"

"Not so fast. Let me go on my own way. The account I shall give you is not my own, it is taken from the book I have just read ; but I shall give it you in my own words, and add, every now and then, some of my own remarks."

"Ay, that way will do very well."

"The house we live in has a cupola at the top."

"The cupola is the head, I know."

"I might say a great deal about the tenant that lives in the house, I mean the soul ; but no, I will go on about the house itself. The framework of it is the skeleton, or bone part, and a capital framework it is ; and the pillars are the legs."

"Well, what else?"

"The windows, as I told you, are the eyes ;

and the doors are the mouth, the ears, and the nostrils."

"Come, you have almost got to the top of the house now."

"The covering of the house is the muscles and skin, and the covering of the cupola is the muscles, skin, and hair. I should have told you that the hinges are the smaller joints, for these move up and down, and backwards and forwards."

"So they do, and very capital hinges they are."

"The cupola is the head, and a noble cupola it makes, just suited to the building, and the apartments beneath it; and now I come to the furniture."

"Ay, what is the furniture? I want to know that more than the other."

"I can only describe a small part of it. In the cupola are the teeth, the tongue, and the brain; and the heart and lungs in the apartments below. The house is, indeed, full of furniture from top to bottom."

"Please to tell me what makes the heart beat so. I can feel mine quite plain, when I put my hand against my side."

"It is the motion of the blood which we feel; but what moves it, is another question. If I knew that, Charles, I should know more than any man in the world knows. Mr. White says, that only God, who knows every thing,

knows perfectly about this. It is his almighty power that has breathed the spirit of life in us, but what that life is we cannot tell. The use of the heart is to circulate the blood through the frame; and the use of the lungs, which are like a pair of bellows, is to breathe with, and to purify the blood by circulating pure air all through the body. Then there are the veins and arteries to spread the blood to every part."

"Well, I never knew that, and I never should have found it out by thinking."

"The uses of the tongue and the teeth, you know as well as I can tell you."

"Oh, yes; most boys know the use of their tongues and their teeth."

"Now consider, Charles, for a moment, what wisdom and power are necessary to form such a house as the human body, consisting, as it does, of more than ten thousand parts, and to keep it in repair! And then think of the millions of human beings which are in the world, and the millions and millions that have lived and died. What a wonderful Being must he be who could do all this!"

"Yes! there is nobody but God that could do it. Millions and millions!"

"And think again of the millions, without number, of animals, from the lofty giraffe to the little mouse; then of birds, from the harpy eagle to the tiny wren; of fishes, reptiles, and insects, that are all alive at the same time, living, breathing, eating, and drinking."



“There is no end to all these things, Henry!”

“Well, now, as I have told you a few things about the house we live in, let me hear you think aloud about it. Let me hear what you think about the human figure.”

“Let me see, there are the head, the body, and the limbs, eyes, ears, nose and mouth, tongue, heart, lungs, legs, and feet. Then come the uses: the eyes to see with, the nose to smell with, the ears to hear with, the mouth to eat with, and the tongue to talk with, and taste with. The heart to circulate the blood; the lungs to breathe with; the hands to work

with ; and the legs and feet to walk with. And now for its associations. The human figure puts me in mind of young people and old people. Some of the young people are at school ; and some are at play, spinning their tops."

"Very good!"

"Some of the old people are beggars, going from door to door ; some are reading their Bibles ; others are walking, with sticks in their hands, for fresh air on a summer's evening."

"Well done, Charles!"

"I hardly know whether I can think of any thing else. Oh, yes, there is this: if the house we live in be so wonderful, how much more wonderful God must be, who made it!"

"A very good finish, indeed. It is a wonderful thing, Charles, that the house we live in, after being made with such wisdom and care, should be allowed so soon to moulder in the dust ; but, then, God can raise it again more beautiful than it was before. Farewell!"





CHAPTER XVII.

“WHY, Charles, you are indeed early. I did not expect you for two or three hours.”

“I dare say not, Henry; but I am going out with my cousin to-day, to see some old ruins, and so I want to make sure of my lesson about learning to think, before I go.”

“There is nothing like being in earnest in a matter; let us begin directly. I want to convince you of the great advantage of thinking on a subject in a proper way: when we know how to divide the subject of our thoughts aright, we can understand it much more clearly.”

“I hardly understand you.”

“I mean, that sometimes a subject, which is

difficult as a whole, becomes very easy when rightly divided. When we spoke of the house we live in, you know, we divided it into the lower story, the upper story, and the cupola, and that enabled us to describe it much better than if we had spoken of it altogether."

"Yes, so it did."

"Look at this piece of paper. It is covered over with blots and dots, of different sizes, all in confusion. Now, if you wished to speak about these blots and dots to me, you would not know one from another. If you pointed to one blot, what would you call it, so that we might both know it again?"

"Oh, I would say, that blot in the middle of the paper, or that dot at the top."

"But there are, you see, twenty dots and blots in the middle; and then, if the paper happened to be turned the other way upwards, what is now the top would be the bottom, so that you would be wrong altogether."

"Then I would say, the large blot, or the little dot."

"That plan would not do at all, for I have on purpose made many of the blots exactly the same size as others, and the dots too."

"I should not know how to go about it at all."

"A little thought will bring order out of this confusion, so that you will be able to talk about any single dot with as little difficulty as if there were only a very few of them on the paper."

“I would give a shilling, if I had it, rather than not know how that can be done. If learning to think will do that, it will do almost any thing.”

“You shall see how easily it can be done. First, I make a mark on that end of the paper which is to be kept uppermost; then, with my ruler and pencil, I draw lines, say half an inch from each other, all across the paper, and cross them with other lines. See! the paper is now covered all over with squares. Now, if I number the squares 1, 2, 3, 4, 5, 6, and so on, till every square has a number, I can talk about any blot or dot on the paper.”

“You may talk about it, but how shall you know one from another any better now than you did before?”

“Because I can say the blot in the middle of number 3 square, or the dot at the bottom of number 20 square, as the case may be; and if you had a piece of paper, blotted and dotted, and squared and numbered, just like it, we might write to each other about any single blot or dot, if we were in different parts of the world, and understand which it was, as well as if we were together pointing to it with our fingers.”

“That is famous, however! I could not have believed it. As soon as I get home I will blot a piece of paper, and square and number it just in the same way, that I will.”

“And when you have done so, what good

will it do you? To what use can you put it?"

"Why, that I cannot tell."

"You must not suppose that I have blotted and dotted this paper only to amuse you. I did it that I might set you thinking; for by this simple contrivance many useful things have been done in the world."

"What, by drawing lines on a piece of blotted paper?"

"Not that exactly; but by the same principle."

"If you had a large picture, and wished to make a small one from it, exact in every part, you should draw lines across it, dividing it into large squares, and make the same number of squares on your drawing paper. Then, by putting in the small squares just what you see in the large squares, you will have a correct copy of your picture on a small scale."

"So I should; and I will try it, you may depend upon it."

"If, instead of making squares on my blotted paper, I had drawn any other forms and numbered them, it would have answered the same purpose."

"I suppose it would."

"Learned men, in this manner, have so divided and classed the stars in the heavens, that they can talk about any star they please to each other, and be well understood, though

you know that hundreds of stars appear to be of the same size."

"But they have not done this by drawing lines across the skies?"

"No; but they looked at the stars, and drew lines round them in their imagination, forming one group of stars into the form of a bear, another into that of a ram, and so on. Then, you know, they were able to say, the largest star in the tail of the bear, or the smallest in the head of the ram. In this way, by forming the stars into forms of some kind or other, they were able, as I said, to talk about any particular star. After that, they drew these imaginary forms on paper, and on globes, with the stars belonging to them, so that by looking on the paper or the globes, they might talk or write about the stars by day as well as by night, just the same as if they had the heavens spread out before them."

"Well, that is curious. I see now why you blotted and dotted the paper; it has made the thing plain to me."

"The same principle has been made use of with regard to the earth. Imaginary lines have been drawn across it, called lines of latitude, and other lines across them, called lines of longitude; and these lines being numbered, are great helps to sailors, when they want to know what part of the world they are in, when they are at sea, a long way from land. The

earth used to be divided into four parts: it is now divided into six. These six great parts are again divided into lesser parts, such as countries, kingdoms, counties, towns and villages: and when all these are drawn on paper, as you see them in maps, we can describe in what part of the world any place is situated; and others, when sitting by the fireside with the map before them, can understand where a place is, just as well as if they were travelling over the very places we were speaking of."

"I do want to be able to think, for thinking seems to tell one about every thing."

"Thinking clearly and properly is a great help in gaining knowledge. Think, for a moment, what a number of trees and flowers there must be in the world. Now, all of these have been divided into classes, so that the moment a flower, or tree, with the blossom upon it, is seen, it is known to what class it belongs."

"Indeed!"

"Yes; and the same with the living creatures of the earth. You would be surprised if you knew how much knowledge a little thinking gives a person. Now, listen a moment. Suppose a strange creature was found, that nobody had ever seen before; a thinking person would find out a great deal about it, when another would find out nothing."

"What could he find out about it?"

“Why, suppose the creature was covered with feathers, and had large wings, like a hawk, a thinking person would directly conclude that the creature flies in the air; but if it had very small wings in proportion to its body, like those of the ostrich, he would conclude that it could not fly far, but that its wings were only meant to assist it in its flight. If it had webbed feet, he would know at once that it was accustomed to swim on the water, like the swan, the goose, or the duck. If it had four feet with hoofs, like a horse, and no feathers, and if it had no sharp tearing teeth, but only cutting and grinding teeth, he would conclude that it could not climb a tree, not being able to lay hold of the branches; and that it fed on grass or leaves, because if it fed on living creatures it would have had claws to lay hold of them, and sharp tearing teeth to eat them with.”

“These things I should never have thought of.”

“Then, if it had paws shaped like the human hand, with joints, he would conclude that it was accustomed to climb trees, just as the monkey does; and if, instead of these, it had strong, sharp claws, and sharp tearing teeth, he would say, with confidence, that the unknown creature lived, like the lion and tiger, upon living animals.”

“You have set me thinking now, at any rate. When I go home, I shall set about blotting,

dotting, squaring, and numbering a piece of paper directly. Then I shall try to copy the picture of a house and its windows on a little bit of paper; nor shall I forget how the stars in the sky and the different parts of the earth are divided. After that will come the trees and flowers, and living creatures."

"Before you go, let me just try your powers of thought, by asking you two or three simple questions. If you heard of a strange creature being found, and that its teeth were the size of a walnut, should you know by that how big it was?"

"No; but I should say at once it was a large creature; because a little creature would not have large teeth. It would eat so little, that it would not want them."

"Very good. You have given me a very good answer. But suppose the creature had fins, should you know by that how it got its living?"

"No, I could not tell that. But I should know that it lived in the water; because its fins would be of no use to it anywhere else."

"Very good, again. And, lastly, if it had a thick furry hide, could you tell whether it inhabited a hot country, or a cold one?"

"I should think a cold one, and that the thick fur was to keep it warm."

"Good! Once more, farewell!"

CHAPTER XVIII.

"I HAVE brought you my piece of paper, Henry, blotted and dotted, and divided into squares, that you may see I have been thinking about what you told me."

"Yes, I see you have been very industriously at work; but where are the numbers to your squares?"

"Oh! on the other side. I thought the figures would be plainer there, than if put among the blots and dots."

"So they are; but, then, you have the trouble to turn over the paper every time you want to refer to them. Did you draw a house on a small scale, from a larger one?"

"Yes, here it is! You see how small the squares are on one paper, and how large on the other."

"I see! You have done it tolerably well, but your house leans a great deal to one side. Mr. White says, that almost all young draughtsmen draw houses, and chimneys, and trees, leaning to the right hand, and that, if they would only try to lean them a little to the left, probably they would succeed in drawing them upright."

"But why do they make them lean to the right?"

"Mr. White thinks it is because they are

done with the right hand. If a boy were left-handed, he thinks he would draw houses leaning to the left. I saw a picture to-day of a house being moved altogether from one place to another."

"How could they do that? What a weight it must be!"

"Yes; but very great weights may be moved with proper instruments. A famous mathematician, in old times, said that if he had only a place to rest his machine on, he could move the world."

"The world! He must have been joking. He surely never could have moved the world."

"He certainly spoke very largely; but machines of very great power are now in use. After a while, you must begin to think about the different powers by which great weights are moved."

"Do you know any thing about them?"

"Not a great deal. I know that what are called the six mechanical powers are the lever, the pulley, the wheel and axle, the inclined plane, the wedge, and the screw."

"I cannot think how you have contrived to learn all these things. Please to tell me what you know about the six powers."

"I can soon tell you the little that I know; and if you will think about it, not only now, but afterwards, it may lead you on to get a great deal more knowledge than you suppose."

“Now, then, for the six powers. The lever comes first.”

“Yes, the lever comes first. If you will consider, Charles, you will see, at once, that a working-man is greatly helped in his employment by his tools. A man cannot scratch up the ground with his fingers, that he may sow seed, without great labour and pain, so he uses a spade; he cannot drive a nail, or bore a hole in a piece of wood, with his hand, so he makes use of a hammer and a gimlet; and as he cannot cut up a tree into boards with his knife, he uses a saw. You see, then, that he is greatly assisted in his work by the spade, the hammer, the gimlet, and the saw.”

“Yes! I hardly know how he could get on without them.”

“In like manner, if man can find out a new power, that is, a force, wherewith he can do easily what he could not do before without much trouble, it is of great use to him; and thus it is that, all over the world, men try to make use of the powers they can find. When a man puts a load on a horse's back which he cannot carry himself, he makes use of the power of the horse. When he employs a running stream to turn a wheel, he uses the power of running water; and when he sets up the sails of a ship, or of a windmill, he makes use of the power of the wind.”

“So he does. You make me think of things so differently from what I used to do.”

"The truth is, Charles, that, like most young people, you never, perhaps, gave yourself the trouble to think of them at all."

"I dare say that you are right, Henry; but you have told me nothing yet about the lever."

"If you had a bank of sand to remove from one place to another, though you could not carry it away all at once, yet you might remove it by a little at a time: but if you wished to take a heavy piece of timber, or a huge stone, from one place to another, you would be at a fault, because you could not, as in the case of the sand, take it away by degrees. It must all go together."

"Then I must get two or three strong horses to pull it away."

"But it is not every one who has two or three strong horses at his command; and, then, if the tree or stone can be moved without them, so much the better: the lever is the very thing to do this."

"Now you are coming to it!"

"A lever is a bar of any kind, either of iron or wood, with a prop, or support, near the end of it. See! Here I place two books on the table close together, and steady one of them with my hand. Now, if I put the point of my knife between the two books, it becomes a lever; for if I bear down the handle, the blade, by resting against the book which I hold steadily, pushes away the other book."

The longer the handle of the knife, the easier is the book pushed away. You have only to suppose that the book pushed away is a tree, or a large stone, and my knife a long bar of iron or wood, to understand how a great weight can be moved by a lever."

"That is very curious, and I must think it over and over again."

"Yes, that is the way to improve in learning to think. When you dig in the garden, your spade is a lever, for when you press down the handle one side of the spade rests on the solid ground, and the other forces up the earth. The longer the handle of the spade, the easier is the earth forced up."

"Why, it was only yesterday that my spade was broken; and when I tried to dig with the short broken handle, I could hardly force up the ground at all."

"That was the case, no doubt. When you have learned to think a little more, and I myself am wiser than I am, we may, perhaps, talk more about the lever. The second power is the pulley."

"Ay, the pulley; now for the pulley!"

"The pulley, as you know, is a wheel with a groove, or hollow, round it; this is fixed in a block of wood. If a cord be passed over the pulley, it enables a man to lift a weight with much greater ease than he otherwise could do; and if he made use of several pulleys, a still greater weight might be lifted. The

greater the number of the pulleys, the easier is the weight removed."

"A pulley must be very useful, indeed. What is the next power?"



"The wheel and axle; and this power is used in many machines. In large warehouses, or wharfs, we see it in the crane; and on board ship, we see it in the capstan and windlass, for winding up the anchor. The power it has is owing to the wheel being larger than the axle; and this is like having a large lever-

age. You can raise a bucket of water from a well with a windlass easily, because the handle you turn round acts the part of a large wheel, or lever, while the axle, round which the rope passes, is but small; but every power requires thought to understand it."

"The wedge was the next. Oh, no, the inclined plane."

"An inclined plane is a gradual slope, whether it be on the ground, or on a floor, or on any other place, by which heavy bodies may be raised."

"But how can a slope raise a heavy weight?"

"I do not say that it can; but it enables us to do so. When you want to go up to bed, if the stairs were removed, you could not climb up the walls, for they would be too steep for you."

"Yes, that they would."

"And if you were to put a ladder straight up the staircase, you would find it rather difficult to go up; but the stairs are an inclined plane, though a steep one, and they enable you to go up to bed without difficulty."

"Yes; but I could not go up so steep an inclined plane without the stairs, could I?"

"No; the stairs enable you to ascend a steeper inclined plane than you could otherwise go up. But consider, there is a chalk hill just beyond the turnpike; the road at the bottom of it is level with the floor of the turn-

pike house, while the road at the top of it is much higher than the chimney. Now, this road is an inclined plane, and horses draw up heavily-laden wagons, which, were it steeper, they could not draw up at all."

"I now see the use of an inclined plane."

"The next power is the wedge, which is a piece of wood or metal, thin at one end, and thick at the other. If you place the edge, or thin end, in a crack of a piece of timber, and then strike the back, or thick end, repeatedly with a hammer, by little and little it will split the timber."

"Ay, I have split up a log of wood myself in that way; but I shall think a little more about it now."

"By putting a number of wedges under a ship lying on the stocks, and striking them, the whole ship, though weighing more than a thousand tons, is gradually raised up. The last power is that of the screw, and this, like the wedge, acts very gradually. It has the advantage of both the inclined plane and the lever, for the power that turns it may be called a lever, and the worm may be called an inclined plane. The power of large screws is wonderful."

"I only hope that I shall remember what you have told me. We have had a very good conversation, and if I do not learn to think, after all your kindness, I shall deserve to be pointed at for my folly."



CHAPTER XIX.

“PLEASE, Henry, to teach me how to think about the sea. I have seen a picture of a shipwreck, and I want to be able to think about the sea better than I can now do.”

“Well, that is very odd! Why, it was on the subject of the sea that Mr. White talked to me for an hour yesterday.”

“Oh, then, you can tell me every thing about it.”

“There is something else that I want to tell you first; it is, that I am going to see my uncle Hammond, so that I shall not be able to help you in learning to think after to-night, till I come back again.”

"I am very sorry, indeed, to hear that. I shall forget half of what I now remember."

"No, no! That must not be the case, for I have spoken to Mr. White about you, and he says that, if you will go to him while I am away, he will help you all in his power."

"Does he say so? But I shall be afraid to go. It will not be like talking with you."

"You have no reason to fear; for Mr. White is as kind and as friendly as any one you ever knew. Before you have spent half an hour in his company, you will be as much at home with him as you are with me."

"Shall I? Well, then, I will go to him; but I am very sorry you are leaving home."

"And now, what shall we say about the sea? Shall I speak of its great breadth, and depth; of its tides, and roaring waves; its islands, sands, coral rocks, and ice-bergs; or of its pearls, sea-weed, shells, and fish? for Mr. White spoke to me about them all."

"I should like to have heard him; but there will never be time to speak about them all. How long is it?"

"In some parts it is thousands of miles broad, and thousands of miles long."

"And how deep?"

"That no one can tell, for the bottom of it has never been found; but a writer says, 'that the ocean would fill up to the very brim twenty-two millions of cisterns, if every cistern was a mile deep and a mile long.' Mr. White

says, that all thinking people, when any object is set before them that strikingly sets forth either the wisdom, the goodness, or the power of the Almighty, feel inclined to pause. The ocean is indeed strong.

“But what, if such be the strength of the sea,
Must the power of its mighty Maker be?”

“Ay, what, indeed!”

“Now, if you really want to think about the sea, Charles, first remember that it is God’s sea. ‘The sea is His, and he made it: and his hands formed the dry land.’”*

“Yes, I ought not to forget that.”

“Then think that it has been rolling backwards and forwards for thousands of years as obediently as a little child, never so much as once disobeying the commands of its Almighty Maker.”

“This is the way that I want to think about the sea.”

“Think next, that it is the great highway, joining one country to another, so that those who live the farthest apart may visit each other in ships, and trade with one another.”

“Do you say, the sea joins one country to another? Why, I thought that it divided them.”

“Mr. White says it joins them; for if the water were land, it would be inhabited by dif-

* Ps. xcv. 5.

ferent people, who, by their different laws, customs, languages, and wars, would separate us from those distant countries which we now are continually visiting."

"No doubt he is right. I shall try to remember, in future, that the sea, which I thought divided countries far from each other, really joins them all."

"Think, Charles, of the abundance of food that the sea has supplied mankind with, in turtle, turbot, salmon, codfish, herrings, lobsters, oysters, muscles, cockles, and a hundred other kinds. Why, there are shoals of fish, many miles in breadth, come swarming along in different parts every season."

"I never heard of such a thing!"

"Well! Have you enough to think of now, or shall I go on?"

"You have given me enough to think of, indeed; and yet I want you to go on."

"Besides supplying us with food, it waters and refreshes the earth at a distance from it."

"How can it do that?"

"I will tell you, for Mr. White explained it all to me. He said, that when the sun-beams fell on the surface of the sea, it drew up millions of hogsheads of water into the air, though we could not see it; by what is called evaporation, the water becomes vapour; and that the winds carried the vapour over the land, on which it fell, making it abundantly fruitful."

“I never heard a word of this before, and it quite astonishes me.”

“When we are astonished at the wonders of creation, we should never lose sight of His almighty hand who performed them. Besides all this, the sea provides us with an amazing amount of salt, as well as with pearls, coral, shells, sponge, and other articles, both for use and for ornament. Having said so much about the sea, let me leave all its storms and tempests, whirlpools and waterspouts, whales and walruses, sharks and shipwrecks, and listen awhile to your thoughts about it. You have thought aloud very well on some other subjects, now let me hear you think about the sea.”

“Well, I will do so as well as I can. The sea is a very great body of water, in which God has put large fish and small fish for our use.”

“Very good! A very good beginning.”

“It obeys God when it is rolling about, roaring and raging, as much as it does when it is still and quiet.”

“Go on.”

“When we think about the sea, it should remind us of God’s goodness, and make us love him; and when we think of its roaring and raging, it should tell us of his power, and make us fear him.”

“Come! You have thought very well upon the sea, and I hope you will not forget what

you have said. Go on learning to think, and learning to think aright, and you will have reason to be thankful for it all the days of your life."

"How many things we have talked about since you first stopped me bowling my hoop along! And how little did I think of your teaching me, night after night, as you have done! I wish you were not going."

"Oh, the time will soon pass away, and Mr. White can help you along faster than I can."

"Thank you! thank you! Farewell! for I see that our time is quite up. A pleasant journey to you."

"Farewell! farewell! Be sure that you go to Mr. White in time, Charles, for he likes people to be punctual."

"Depend upon it, Henry, I will be with him by six o'clock."



CHAPTER XX.

“WELL, my young friend, you are come; I am very glad to see you. Henry told me that you would be sure to be here by six o'clock.”

“Thank you, for being so kind as to let me come. The last word that Henry said to me was this: ‘Be sure that you go to Mr. White in time, Charles, for he likes to have people punctual.’”

“He is very punctual himself; and, to speak the truth, has improved very fast ever since he began to learn to think. He knows ten times as much now as he did before.”

“He seems to me, sir, to know almost every thing.”

“He is certainly getting to be a very thoughtful boy; but we must not lose our time in talking about him. Henry tells me that you have already made some progress. Do you think you can tell me why a peg-top spins, a ball bounces, a humming-top makes a noise, and a kite flies in the air?”

“Oh! Henry has told you all about these things, I see.”

“Could you think aloud, now, about a knife, a piece of flint, a bullet, and a bit of cork? Or

of food, clothing, fire, a pin, loaf sugar, alum, and a mahogany table?"

"Why, sir, you know all that Henry has talked to me about!"

"Well, I believe that is pretty near the truth, for he has always told me what has passed between you, and asked me how he should go on with you. Do you remember what he read to you, about a chair, a wheelbarrow, and an umbrella?"

"Oh yes, very well; and about the steam-engine, safety-lamp, microscope, telescope, telegraph, a ship, and a mariner's compass."

"Well, your time has not been thrown away. He asked you, I think, a great many questions, that you might use your wits and look sharp about you. I dare say that you know now, very well, which is heavier, a pound of lead, or a pound of feathers?"

"I know that there is not the least difference in the world between them; but it puzzled me when Henry first asked me."

"Did you ever make any inquiry of him about such things as a squirt, and a weather-house?"

"Yes! About both of them; and he explained to me how it was that the sun put out the fire; and made it quite clear that the earth was round."

"Did Henry ever tell you that thoughts grow; and talk to you about flowers?"

"Yes, he did; and I was quite surprised at what he said."

"And he was a little surprised at what you said, when you thought aloud about birds?"

"If he had not put me in the way, I should never have been able to have said any thing about them."

"You know, I believe, that there are different ways of doing things, and that we ought never to think lightly of those who adopt a different mode from our own?"

"Yes; Henry explained all that to me, and showed me how foolish I was in my thoughts when I pretended to build a house; and spoke a great deal about 'the house we live in,' that is, the human body."

"Some of his questions were very curious, when he tried to sharpen your wits by compelling you to think. He sadly puzzled you."

"Yes; but I should be able to answer a little better now."

"Which do you think is the best way of conquering an ill-natured, spiteful schoolfellow?"

"I would threaten to tell his master of him if he did not act better."

"There is a better way than that."

"Perhaps you would give him a good beating."

"No, for that would most likely make him

worse ; to do him a deed of kindness would be the best way, in my opinion. When I was at school, I had a sad spiteful school-fellow, and I hated him with all my heart ; but this was wrong. I then altered my course, and prayed for him ; and one day, when he was sadly distressed, not being able to do his sums, I took an opportunity of telling him how to do them. He never acted spitefully to me again."

" Well, that plan answered very well."

" And no wonder at all ; for it was in agreement with God's word, which says, ' Love your enemies, bless them that curse you, do good to them that hate you, and pray for them which despitefully use you, and persecute you.'"

" Before Henry left home, he told me, ' You need not be at all afraid of Mr. White, for he is so kind and friendly, that, before you have been with him half an hour, you will feel as much at home with him as you do with me !' "

" And you find it so, do you ?"

" Yes, indeed I do."

" Well, I am glad of that ; for, to tell you the truth, I have been talking in Henry's way, that you might feel quite at home with me. It will give me great pleasure, in his absence, to help you in learning to think ; but, after all, your success will depend chiefly on yourself. Let it be your constant aim to think

reverently of God, and kindly of your fellow creatures, and to exercise judgment in all things left to your decision. You have made a short visit to me to-day; the next time you will, perhaps, stop longer."





CHAPTER XXI.

“Oh, here you are, Charles! Now, without losing a moment, let me see if I can do something in the way of improving your judgment.”

“Henry told me that, by learning to think, my judgment would be improved.”

“It is not thinking much, but thinking wisely, that increases judgment. Now, listen to me. Good and evil, right and wrong, and truth and falsehood are so mingled together in the world, that without a sound judgment we are always liable to be in error. If things were all black or white, it would require no care to distinguish them; but when they are of all grades and shades of colour, much care is required. Do you understand me?”

“Yes, I think I do.”

“Now, mind that you are on your guard in listening to a little tale that I will tell you. I

shall soon perceive if you have any judgment. A poor bald-headed old man, who did not know his letters, set off by himself to a distant place, a long way from any houses, to set up a school there. He had but a hundred pounds in his pocket, and—”

“A hundred pounds! Why, you said he was a poor man. How could a poor man have a hundred pounds?”

“Very true, Charles. I see that you are thinking, and that you are not without judgment. Let us suppose there is some mistake about his having a hundred pounds; let us suppose he had no money. Well, on went the poor old man, his gray hair blown about by the winds—”

“Gray hair! You said he was bald-headed.

“Well. Then I suppose there must be a mistake about his having gray hairs. No sooner did he reach the place than he called at one of the cottages—”

“At one of the cottages! How could he do that, when the place was a long way from any houses?”

“Then there must be a mistake about his calling at a cottage. Well, he set to work to build his school, and—”

“How could he begin to build a school, if he had no money, and was alone?”

“Did I say he was by himself? Then there must be some mistake about his building a school.”

“It seems to me to be nothing but mistakes,

for, if he could have built a school-house, where would he have gone for his scholars, when there were no houses there?"

"You are right, Charles. I filled my tale with inconsistencies on purpose to see if you had judgment enough to find them out, and I am pleased that you have discovered them. Before we know how to judge rightly in any case, we must see it in its different bearings. Two knights are said to have fought a battle together, in ancient times, about a shield; looking on one side of it, one of them declared it was of gold, while the other, looking on the other side of it, would have it that it was made of silver. Now, had they prudently examined the shield on both sides, instead of fighting about it, they would have discovered that one side of it was silver, and the other gold."

"They had not much judgment, however. They had never learned to think."

"When a witness is called into a court of justice he is sworn to speak the truth, the whole truth, and nothing but the truth; and I will show you how differently a case may be represented. If I were to tell you that a poor lad, the son of an honest day-labourer, went into a shop, and asked the old woman who kept it to change him a sixpence, and that, after giving him the change, she called him all manner of names, you would think the woman was an ugly old creature, and that the poor lad was an ill-used person."

“Yes, that I should.”

“Now this, remember, is a case wherein the truth was spoken, but not the whole truth. A person of judgment, thinking upon this matter, says to himself, if the lad has done nothing more than what has been reported, why should the old lady be bitter against him? He therefore prudently makes further inquiry, when he discovers that the sixpence which the boy changed was a bad one. This alters the case at once; and now, instead of pitying the boy, and feeling angry at the old woman, we pity the latter, and agree that the lad deserves a good flogging.”

“So we do. I was wrong, certainly.”

“But suppose a witness comes forward in the boy’s favour, saying, that though the boy did offer a bad sixpence, he did not know it to be a bad one, and that his father sent him with it to get it changed.”

“Then I should say that, after all, the poor lad was ill used, and that the old woman was too hard upon him.”

“It might be concluded so at once by a thoughtless person, but a prudent one would not be so easily satisfied. What should you think, if you went directly to the boy’s father, who not only denied having given his son the sixpence, but declared that he had already given him two separate floggings for doing a similar dishonest thing?”

"I never knew the like! Why the lad was a cheat and a thief, after all."

"You have here an instance wherein, though a case is represented in different ways, judgment is enabled to discover the truth. If we were to have you in the jury-box, before you had learned to think more, the innocent would probably be condemned, and the guilty go free. A little deliberation is necessary for us all, if we would act prudently. One night, when taking my walk, I somewhat suddenly began to run, when instantly a man followed me as hard as he could scamper, crying out, 'Stop thief! stop thief!' I stopped, and the man came up, out of breath, and asked me if I had seen him? 'Seen who?' said I. 'Why, the thief,' replied he; 'he ran this way like a shot.' I then told him that I was the person he mistook for the thief, and should be obliged to him if he would tell me what I had stolen. This made him, no doubt, feel very foolish in having been so hasty in his judgment, for he slunk away directly."

"He was hasty, indeed."

"I once heard of a culprit being brought before a magistrate for stealing a spade. 'I can bring two witnesses that saw him take it,' said the man who appeared against him. 'And I,' observed the culprit, 'can bring twenty witnesses, your worship, who did not see me take it.' 'Set the man at liberty,' said the magistrate, 'for there are ten to one in his

favour.' Now, what say you, Charles; was the magistrate right or wrong?"

"Well, I hardly know."

"Hardly know! Why, do you not see that the culprit had twenty witnesses, while the other had but two?"

"I suppose the magistrate was right, then."

"And I suppose he was altogether wrong. Why, the twenty witnesses who did not see the culprit take the spade might have been a mile from the place when the spade was stolen. Now, be a little more on your guard. What should you say, if after hearing a shriek you ran to the spot, and saw one man lying on the ground, and another running away with a bloody knife in his hand?"

"What would I say? I would cry after the runner, 'Stop him! Stop him!' And, if he was overtaken, I would have him, if I could, dragged to prison, or before a magistrate, directly, as a murderer."

"So I thought; but, in so doing, you might be as much out of the right way as the man who ran after me."

"What! when I saw one lie dead, and the other running off with a knife in his hand?"

"There would be enough, certainly, to make you think a murder had been committed; but, in such a case, it would be wise, before hurrying him off to prison, to hear what he had to say for himself."

"Why, what could he have to say for him-

self? Not a word, for he would know himself to be guilty."

"He might say this: that he was by trade a butcher, and that, as he was killing a sheep, he heard a cry; lifting up his head, he saw a gentleman stagger and fall; hastening to him he found him in a fit, and, therefore, without stopping to lay down his knife, he ran off towards his own house, which was at a little distance, for a glass of water. Every word of this might be true; and, on examining the man on the ground, you would find that there was no wound; and thus, instead of feeling anger against him, and hurrying him off to prison, or before a magistrate, as a murderer, you ought rather to admire him for his humanity. Or if there was a wound, it might have been inflicted by his own hand, and the stranger may have seized the weapon or drawn it from the wound, and hastened for help."

"Who could have thought it possible? I never shall, I am afraid, learn to think properly."

"Oh, never fear! You are, however, much too hasty. You must, as I say, look at a thing in all its bearings, to ascertain the truth."

"When you point out my error to me, I can see it, but, the worst of it is, I cannot see it when left to myself."

"'Rome was not built in a day,' and you have not been disposed to think long. There are so many cases in which judgment has to

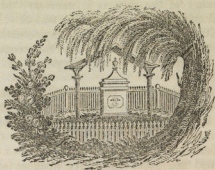
decide on the character and lives of others, that every one ought to try anxiously to attain it. To set a rogue at liberty would be a bad thing, but oh, how sad, through want of thought and judgment, to be the means of depriving a fellow-creature of liberty or life!"

"Yes, that would be very sad."

"Now, remember the few following hints. If your judgment is ever required about any thing, first take pains clearly to understand the case, whether it be a trifle, or an affair of importance. Then pause a little, to consider whether what you have heard agrees with itself. When I told you of the poor man having a hundred pounds, you found out that his poverty and his money did not agree. Next consider whether you want more information to enable you to decide, or whether you have not already more than the truth. Then take into your thoughts the particular circumstances of the case, for a man will do that when in anger, in distress, or temptation, which he would not do at other times. Any one attending to these points would be sure to increase in judgment."

"I am sure that my judgment ought to improve, with all the pains you take with me."

"I must now say farewell! The three great points necessary to observe, in increasing your judgment, may be given you in three words: *pause, inquire, consider.*"



CHAPTER XXII.

“THAT is right, Charles. I am glad you have come, for I am now just ready for you. You seem a little out of breath ; have you been running ?”

“Yes, sir, I had a good run, for I was afraid of being late.”

“Well, now for a little serious conversation. Learning to think is an excellent thing in a hundred ways, for it defends us from so many evils, and secures to us so many advantages. But what would be your opinion of a boy who was very thoughtful about his mornings, but never thoughtful at all about his afternoons ?”

“I should think him very silly. We have as much reason to think in an afternoon as in a morning.”

"But if he thought a great deal about the beginning of the day, is it necessary that he should think so much about the end of it?"

"Every bit as necessary. Why, something might happen in an afternoon that required more thought than what happened in the morning."

"I am glad that you see this so clearly, because now you will admit that we ought to think about the end of life, as well as of the beginning."

"Certainly."

"And the more especially because something will happen at the end of life that requires more thought than any other thing that can happen at the beginning. I mean death. If it is certain that we must die, and do not know when, ought we not to think of death every day of our lives?"

"I think we should."

"I dare say that in your play you sometimes blow bubbles with soap and water."

"Yes, I have done that many a time."

"Well! which do you value most, one of the glittering bubbles you blow, that looks so bright, or your humming-top?"

"Why, my humming-top ten times over: I would not give up my humming-top for a hundred bubbles of soap and water."

"No! Why not?"

"Because the bubble does not last a minute. The humming-top will serve me a

very long time ; but the bubble bursts while I am looking at it."

"What you say is true ; and now as you are learning to think, if in your mere play-things you value more what is lasting than what is passing away, you must learn to apply the same reasoning to time and eternity. This life is very short, the life to come is very long ; you ought, then, according to your own showing, to value the life to come a hundred times more than the life that now is."

"I certainly ought to do so."

"The more you think of this, the more you will be convinced of its truth.

'The bubble of life a breath may sever,
But the precious soul will last for ever.'

"Old people ought to think a great deal about death."

"Why so?"

"Because they are sure to die soon, and therefore they ought to think about it."

"And are not young people liable to die soon, also ? Some of them will doubtless live to old age ; but for every aged person that is carried to the grave, many younger people die."

"Indeed !"

"What I say is quite true, and the more we think of death the more likely are we to act well throughout our lives. Who would like to die thinking a bad thought, speaking a bad word, or doing a bad action ?"

"Nobody would like that."

"And yet none of us know when we shall die, so that unless we think on death, we may be taken by surprise in an unguarded moment. Tell me, Charles, what have been your own thoughts about death?"

"I have always tried to put death away by not thinking about it."

"They say that the ostrich of the desert, when hunted, hides her head in the sand, supposing that because she cannot see the hunters, the hunters cannot see her."

"What a foolish bird!"

"But do you think the bird more foolish than he who imagines that he can put off death, merely by putting away the thought of it?"

"Perhaps not, but death is so very gloomy."

"We make it so, Charles, when we see not the life that is beyond it. A good man says, 'Death has nothing terrible in it, but what our life hath made so.' Is it not wiser, think you, to lessen our fears of death, by preparing for it, than to increase our terrors by living thoughtless lives?"

"I think it is."

"We are talking on a serious subject, Charles; but learning to think will be of little use to us, unless it enable us to learn to die. I wanted to speak with you on this point, not to put a shadow on your brow, but rather to put sunshine in your heart."

“You are very kind to talk to me as you do.”

“Why, it would be very unkind if I did not do so. I love to see you happy, but then I wish you to be happy for time and eternity. Suppose you were enjoying a day’s pleasure, but had to cross a deep river at night, on your return home. Would it be acting the kinder part, to keep you laughing all the day long, or to say, Charles, you are very happy, but you will be not the less so, if you look out in season for a boat to bear you over the water at night?”

“Oh, it would be very unkind indeed, to let night come on without reminding me of the boat, if I had forgotten it. Night would be the worst time in the world, to run about after a boat.”

“Well, then, as we have all to cross the river of death, we all ought to remind one another to make preparation. God’s holy word calls upon us continually. ‘The time is short.’* ‘We all do fade as a leaf.’† ‘Dust thou art, and unto dust shalt thou return.’‡ ‘Watch, therefore: for ye know not what hour your Lord doth come,’§ are texts of Scripture; and there are hundreds such, that we ought to regard.”

“I must think a little more about death.”

“God’s word points out, too, a great dif-

* 1 Cor. vii. 29.

‡ Gen. iii. 19.

† Isa. lxiv. 6.

§ Matt. xxiv. 42.

ference between the death of different people. 'Mark the perfect man, and behold the upright: for the end of that man is peace.'* 'The wicked is driven away in his wickedness: but the righteous hath hope in his death.'† To learn to think of all the things in the world, and not to think of death, would be a terrible mistake."



"But it is so gloomy to think about the grave. I remember seeing my uncle before

* Ps. xxxvii. 37.

† Prov. xiv. 32.

he died. I saw the doctor come and feel his pulse, while he held his watch in his hand. I always feel sad when I think of it.'

"'If the grave affright thee,' says one, 'learn to look beyond it.' It is sin, Charles, that makes death terrible; but God can pardon sin, and take away the fear of death."

"I should like not to be afraid of death."

"Do you think the caterpillar has any reason to fear death? Why it only changes him into a butterfly, giving him wings to fly with, and be happy."

"I should not fear death, if it would do for me what it does for the butterfly."

"But, my dear Charles, if you have a friend in the Saviour of sinners, death will do a thousand times more for you than it does for the caterpillar. We will speak a little more of this the next time we meet. What I now want you to think of, is the necessity of both young and old preparing for death. I have a book here that, in one part of it, sets forth the subject in so plain a way, that you will be sure to understand it."

"Please to read that part to me."

"A certain traveller, who had a distance to go—one part of his road leading through green fields, and the other through a tangled road of brambles and thorns—made great preparations for the first part of his journey.

“He dressed himself in light and gay clothes, and put a cake in his pocket; he stuck a nosegay in his bosom, and taking a light slender cane in his hand, nimbly proceeded on his way along the beaten path across the green meadows. The sun shone in the skies, and on went the traveller comfortably, pleasantly, and even delightfully.

“After a while the road became rugged, and by the time night drew on, the traveller was in a pitiable plight. His provisions were exhausted; his clothes wet through, and partly torn from his back by the briars; his flowers were faded; and weary as he was, his slender cane would not bear his weight: a stream of water was before him, and darkness around him.

“‘Alas!’ said he, smiting his breast, ‘I am hungry, and have no food; wet to the skin, and have no dry clothes; weary, and no staff to rest on; I have a stream to cross, and here is no boat; I am bewildered, and have no guide; it is dark, and I have no lantern. Fool that I am! why did I not provide for the end of my journey as well as for the beginning?’

“Now, Charles, time is hastening away, and we are all travellers! Life is the beginning, death the end of our journey. If we have made preparation for both, happy are we; but if otherwise, we resemble the foolish traveller.”

“I am a foolish traveller, that is certain, but what you have said will make me think about death; the caterpillar and the foolish traveller will be uppermost in my thoughts.”

“Come again on Wednesday, and we will say something more about crossing the river.”



CHAPTER XXIII.

“COME in, Charles ; better be a little before the time than a great deal after it. I am glad to see you so ready to come. Whenever you make an appointment, never be behind-hand, if it is possible to avoid it.”

“I ought to be in time, sir, when you take the trouble to teach me.”

“Punctuality produces order, the want of it causes confusion. I once heard of a man who called on a prime minister to be put into some office ; he was five minutes behind the time appointed. ‘The office was disposed of,’ said the minister, ‘five minutes ago.’”

“And did he lose the place, sir, because he was five minutes too late?”

“He did ; and if you put the circumstance down in your memory, it will do you no harm.”

“If ever I have to call on a prime minister, I will take care not to be five minutes too late.”

“The prime minister will not want to see you on such an occasion just at present. You must learn to think a little more first, but it is very well to be prepared. To make a good resolution is a good thing, to keep it is a better. I was rather afraid of having tired you

the last evening we were together. We were speaking on a very grave subject; but your coming early seems to say that you are not much offended with me."

"You are too kind to offend me. I have thought a great deal of what you said about the caterpillar, and the traveller, and about it being sin that makes death terrible."

"I am glad to hear that. To see my young friends cheerful is a very pleasant thing, but then they should not forget that they are not to remain in this world for ever. Have you been much in the habit of reading your Bible, Charles?"



"Not a great deal; but I have read about Joseph and his brethren; and king Pharaoh and his people being swallowed up in the sea;

and of Samson rending a lion; and about the golden image; and about Christ, and his apostles, in the New Testament."

"After a while I hope you will read it more, not so much for the interesting histories it contains, as to mark the dealings of God towards his chosen people, and to ponder on the way of salvation it sets before sinners."

"I must read it more than I have done, and think more about it. Indeed, at present, I have hardly thought about it at all."

"That is the case with hundreds and thousands, who, though they read it from time to time, take it up and lay it down as though they had no interest in its contents. Shall I read a few striking remarks about it from a book I have here, which appear to sum up, in a few words, a great part of its contents?"

"Do, if you please."

"The account is very short, it begins thus: 'The Bible tells us all we know of God, as Father, Son, and Holy Ghost; all we know of heaven as a place of joy, and of hell as a place of torment.'"

"If no other book besides the Bible tells us these things, we ought to read it indeed."

"The Bible is the only book that tells us of the beginning and the end. It is the only book that makes known to us our creation and redemption. No other book is the word of God. The Bible excites us to kindness,

zeal, holiness, and happiness: it upholds all that is virtuous and good, and condemns every thing that is sinful in thought, in word, and in deed. The Bible tells us that all men have sinned, and come short of the glory of God; and that the wicked shall be cast into hell, and all the nations that forget God. It tells us that God has found a ransom: that Jesus Christ, his Son, died upon the cross for sinners; and that those who believe in him shall not perish, but have everlasting life.' Of all subjects most worth knowing, this is what every one in the world should know. All who believe the Bible, and live a life of faith in the Son of God, have the promise not only of this life, but of that which is to come. And those who disbelieve the Bible, despise the hope of salvation in a crucified Redeemer, and lead a life of ungodliness, have in this world a life without peace, and a fearful looking for of eternal judgment in the next. I hope that your friend Henry thinks much of these things; but he told me, that he had rather I would talk to you about them before he did."

"I dare say he thought you knew them better than he did, that was the reason."

"Very likely it was; but it may do you both good to talk of them together. 'Those who reverence, love, and practise the precepts of the Bible, will find the book a blessing; while those who deride, hate, and disobey its

precepts, will bring on themselves the heaviest condemnation.' ”

“ I am sure we ought to think of that.”

“ ‘ The word of God has both warnings and encouragements, and it invites even little children to come to the Saviour. We all love glad tidings, but what tidings are there in the whole world of so joyous a kind, (seeing that we are all sinners,) as the glad tidings of the gospel, “ God so loved the world, that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life? ” ’ ” * This is a truth that should sink deep into every heart. I said, if you remember, that we were all travellers.”

“ Yes, you did ; and you spoke of the traveller who set off without being provided for his journey.”

“ Every one, too, who is journeying forward to heaven is also a pilgrim. In this journey, there are three very important points to which we should attend. The first is the setting off, and this should be done in youth. ‘ Remember now thy Creator in the days of thy youth.’ † The next is, having set off, to hold on our way without loitering, or drawing back. ‘ No man, having put his hand to the plough, and looking back, is fit for the kingdom of God.’ ‡ The last is, to finish our course with joy, for then we shall find the end to be eter-

* John iii. 16. † Eccles. xii. 1. ‡ Luke ix. 62.

nal life. Do you think you shall remember any part of this conversation?"

"Oh, yes! a great deal of it."

"It would have been a sad reflection to me, if, in helping you to learn to think, I had neglected to speak to you of the way of salvation, the subject of all others the most important for us to think upon. I trust that, by God's mercy, you and Henry will feel sin, mourn for sin, pray against sin, hate sin, and forsake sin; and that you will believe in the Lord Jesus Christ, love him, obey him, and praise him. So long as you do this, your learning to think will be turned to good account. I suppose, Charles, that you never had such a serious conversation before."

"Never in my life. I have been told that the Bible is the best of books, but I have never been talked to in this way before."

"Here are two or three little books. Put them in your pocket. You will find them interesting, and all of them say something about the Saviour, and the only way of salvation; namely, through faith in Him who died on the cross, the just for the unjust."

"Thank you, sir. They are attractive books, indeed. Every one has a picture."

"Yes, the pictures are meant to catch the eye, but the printed part is to catch the heart. There was a time when such little books could not be had for love or money, but now they are scattered about the country by thousands.

A book is one of those things from which every thinking reader may take something away, without leaving the less behind."

"So it is; how strange!"

"That will do for you to think upon. Suppose you try to puzzle Henry with the question, and put it in this shape: the answer will be, you know, The contents of a book:—

I have what seems, as I may say,
A wonder to the mind,
For you may take it all away,
A dozen times, or more, a day,
Yet leave it all behind."

"Yes, that will do admirably. It will be sure to puzzle him; and yet I hardly know, for he thinks, and thinks, till he finds out most things."

"Well! if he should find it out, ask him another question. I have one here that I have puzzled at for years, and have not found it out yet. It is this, and if you and Henry puzzle at it for an hour, it will not be an hour thrown away:—

How should the young attempt to know
Betimes the Saviour's love?
How can they best serve man below,
And praise the Lord above?

"The best answer that I can find is in the 119th Psalm, and the latter part of the 9th verse; but try if you and Henry can find out a better."



CHAPTER XXIV.

“WELL, Charles, this will be our last evening, for Henry is expected home to-morrow. I must now see what progress you have made in learning to think.”

“You will call me a very dull learner, but, by and by, I may get on better. Such a comical thing happened to me last night! When I went up stairs to bed, I heard a noise among some boxes which had been piled up one upon another. Every time I walked across the room, the noise came. It was just like a mouse gnawing wood.”

"And very likely it was a mouse gnawing itself a hole through the floor."

"I stood still a minute to consider. Now, thought I, if Mr. White and Henry were here, they would be sure to find it out, so I determined to do the same."

"And how did you proceed?"

"On walking across the room, I found that the noise did not come till I set my foot on a creaking board. Then I tried it over and over again, till I traced the noise to the topmost box. 'Oh, oh!' thought I, 'now I have got you, Mr. Mouse.' So I suddenly lifted up the lid, but there was neither mouse nor any thing else to be seen."

"Then what did you do next?"

"Why, I said to myself, neither Mr. White nor Henry would give it up, so I will find it out yet. When the box was opened, it never made the least noise, though I set my foot on the creaking board: but when the lid was down, the noise came as before. I sat down on the side of the bed, and thought a moment, and then it struck me, that it might not be a mouse, but something about the box itself."

"Very good reasoning indeed."

"I went to the box and shook it gently, and the noise came directly. I then put down the lid and shook the box, but all was quiet. 'Oh!' said I, 'it must have something to do with the lid.' Looking at it all round, at last I saw the fastening shake."

"You are a thinker, Charles, already."

"Looking at the lid, while I shook the box gently, at last I saw that the fastening was quite loose, and that the staple went nick-nack against the lock. It was the staple that had made all the noise; so I put a bit of paper round it, and never heard the noise after."

"You managed very well. This comes of learning to think. But now, Charles, let me hear you think aloud about this sea-shell."

"Oh, it is a very pretty one. Let me see! What are its parts and qualities? It has an outside, and an inside. It is hard and brittle, for the edges are chipped a little. It is of a yellowish brown on the outside, and of a beautiful pink in the inside. It is light, and of a curious form; it has no taste; and when I put it to my ear, it roars."

"Very good! You get on very well."

"It is useful as a chimney ornament, and, very likely, the fish that lived in it was good to eat. Now for its associations. It reminds me of roaring billows, of floating islands, of coral rocks, and of shipwrecks; and the lesson I learn from it is, that if God gave the fish such a beautiful house to dwell in, he will take care and provide for all who trust in him."

"You are getting on in learning to think very creditably. And now for some questions. How would you find out the number of gooseberries in a peck?"

"I would measure out a half pint of them, and count them, and multiply the number by the number of half-pints in a peck."

"And that would be the very best way you could adopt. I dare say that you remember why a kite flies in the air?"

"Yes! It is because the paper of which it is made is so light, and because the string pulling it one way, and the tail of it the other, it is held with its broad face to the wind."

"Tell me why a hoop rolls along? why a peg-top spins? and why a ball bounces?"

"The hoop rolls and the top spins, because, being set in motion, according to a law in nature, they must keep up that motion till stopped by other causes. And the ball bounces, because the part dented in by striking against the ground, makes a sudden spring, being elastic, to recover its round form, and this forces it upwards."

"Now, perhaps, you will tell me, if one man can hear the report of a gun a mile off, at what distance twenty men can hear it."

"Why twen—no, no! Twenty men cannot hear it any farther than one man. They can all hear it at just the same distance, that is, if none of them are hard of hearing."

"It is not so easy to puzzle you now, as it was, by a great deal. Since you have begun to learn to think, you have had your wits more about you. I dare say that you could tell me now where they catch red herrings?"

"They catch the herrings in the sea, but they are not red herrings till they are salted and dried, I remember that."

"Henry told me that he summed up for you some of the advantages of thoughtfulness. Have you forgotten what he said?"

"I should have forgotten it, I am afraid; but I asked him afterwards to write it down. See, I have it here, and will read it, though now I almost have it by heart. 'Thinking adds to our pleasure, making every thing around us interesting. It produces a love of thought, and a habit of pausing and considering before replying to a question. It extends our knowledge and power, quickens our faculties, corrects our judgment, enlarges our minds, and explains many things around us, which we do not understand. It lessens labour, makes hard things easy, protects us from evils which thoughtlessness brings upon us, and renders us more useful and more happy. In a word, if we learn to think, and put our thoughts to a good use, we shall not fail, through the teaching of the Holy Spirit, to fear and obey God, and to love and serve mankind.'"

"Did you read any of your little books?"

"Yes; and I lent one of them, which was about the value of the soul, to my cousin; for I thought that, perhaps, we might both get good from the same book."

"A very proper thought too; I hope you

will follow out your intention of reading God's word more, for that will put the best thoughts into your head at all times. I hope you will often seek Divine aid by private and earnest prayer. To get to heaven should be the first object of every one on earth; and let us, also, seek to help others on their way there. Farewell, for the present. Now and then, I shall, no doubt, see you."

"I am very much obliged by the pains you have taken with me, and I shall not forget to think of what you have told me."

"May it please God to make it a blessing to you."

"Farewell, sir; I thank you again and again, for all your kindness."

"Farewell! Earnestly pray to God to give you his Holy Spirit that you may be taught aright, and made wise unto salvation, through faith which is in Christ Jesus. Good thoughts are the beginnings of good deeds. To think aright is the seed, or the sapling; to act right is the tree and the fruit. The way to be useful, and peaceful, and happy, is to seek Divine grace, to watch and pray, and to fear God and keep his commandments.

'The Lord of glory keep in sight,
In all your thoughts and ways;
He only learns to think aright
Who reads His word with true delight,
And lives to act His praise.'

THE END.

